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SERVICE, INVENTORY AND MAINTENANCE SYSTEM COMPUTER SYSTEM DESCRIPTION Volume I: Service/Unit-Change System

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THE MITRE CORPORATION

DECEMBER 1975
FINAL REPORT

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Prepared for

U.S. DEPARTMENT OF TRANSPORTATION
URBAN MASS TRANSPORTATION ADMINISTRATION
Office of Transit Management
Washington DC 20590

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16. Abstract

The Service, Inventory and Maintenance System (SIMS) is a computer-based information system designed to assist urban transit systems in the management of their bus service, maintenance and inventory operations. SIMS comprises three interrelated program modules: the Service/Unit-Change, Repair Cost and Inventory Modules. This report describes the overall structure, inputs, files and data processing functions of the SIMS Service/Unit-Change system.

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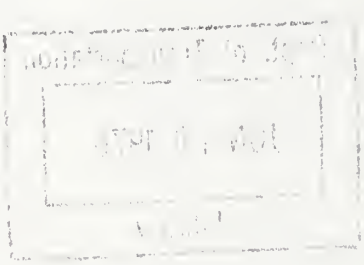

PREFACE

The Service, Inventory and Maintenance System (SIMS) is a computerized information system designed to assist urban transit systems in the management of their bus service, maintenance and inventory activities. The SIMS system was developed by the MITRE Corporation under the sponsorship of the Office of Transit Management, Urban Mass Transportation Administration.

SIMS comprises three interrelated program modules. The Service/Unit-Change module is designed to assist transit management in the scheduling and control of the vehicle servicing and maintenance operations. Labor and cost reports on the bus maintenance activity are produced by the Repair-Cost module. The Inventory module provides management and financial control reports on all transit inventory activity such as parts issues, purchase orders and receipts.

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1.0 INTRODUCTION

Under the sponsorship of the Urban Mass Transportation Administration (UMTA), a system to record, analyze, and report on the maintenance activities of urban bus systems has been developed. This information system is the Service, Inventory, and Maintenance System (SIMS).

The Service/Unit Change (S/U) System is one component of SIMS. It is designed to provide maintenance management with information that will assist in the control and scheduling of vehicle maintenance. This information is provided in the form of reports pertaining to:

(a) the use of consumables--fuel, oil, and coolant--and the relationship of consumption to mileage traveled, and

(b) the performance of maintenance jobs-inspections, unit changes, engine re-rings, engine overhauls, and brake relines. Unit changes are defined as the replacement of vehicular components as a means of effecting repairs.

The description of the S/U System contained in this document includes details of inputs, reports, files, procedures, and computer program functions. The necessary steps for the installation and initial implementation of the system are described briefly in the last section.

To facilitate the implementation of the SIMS S/U System on various object computers, the software has been written in ANSI COBOL, and utilizes the report writer feature for most of the report generators. The functions of each program is described in detail in this document. A source listing of each program and of the copy library is provided in Supplement I to this document.

The system has been implemented at Alameda-Contra Costa Transit District (ACTD) and Dallas Transit System (DTS), under demonstrations sponsored by UMTA. In this document, references are made to the details of system implementation at these two locations. These references illustrate the user-specific features of the system. At both locations, the system is run on a service bureau basis. The object computer for ACTD is an IBM 360/65 and for DTS, an IBM 370/145.

2.0 OVERALL DESCRIPTION OF THE SIMS SERVICE/UNIT CHANGE SYSTEM

The SIMS Service/Unit Change (S/U) System consists of programs, files, and procedures to accept and store transaction data, and to produce reports that can be used by management to control and schedule vehicle maintenance operations. The majority of these reports are on-demand reports.

Figure 2.0-1 is a flowchart illustrating the system without reference to the on-demand reports. Input consists of request cards, Job Control Language (JCL) cards, and a transaction card file. This input is submitted daily, except for weekends and holidays. The system is designed to accept a transaction tape file as an alternative to or in addition to the card file. On the flowchart, reference is also made to another input source, data set CN1510.SRV.M.TRTAPE. This data set contains transactions input as a tape file. The two transit properties (ACTD and DTS) at which the system has been demonstrated use automated devices to enter vehicle servicing transactions. The information entered by this means requires conversion to a format acceptable to the S/U System. The conversion is accomplished through the execution of a special-purpose program at each property. The output of this program is the data set, referenced above.

Transactions entered in the S/U System include constants file transactions and vehicle transactions. The former maintain four system constants files that are used to validate and test vehicle transactions. The latter update a Vehicle Master File, and selected transactions are stored in a Transaction Master File for future reference. Input

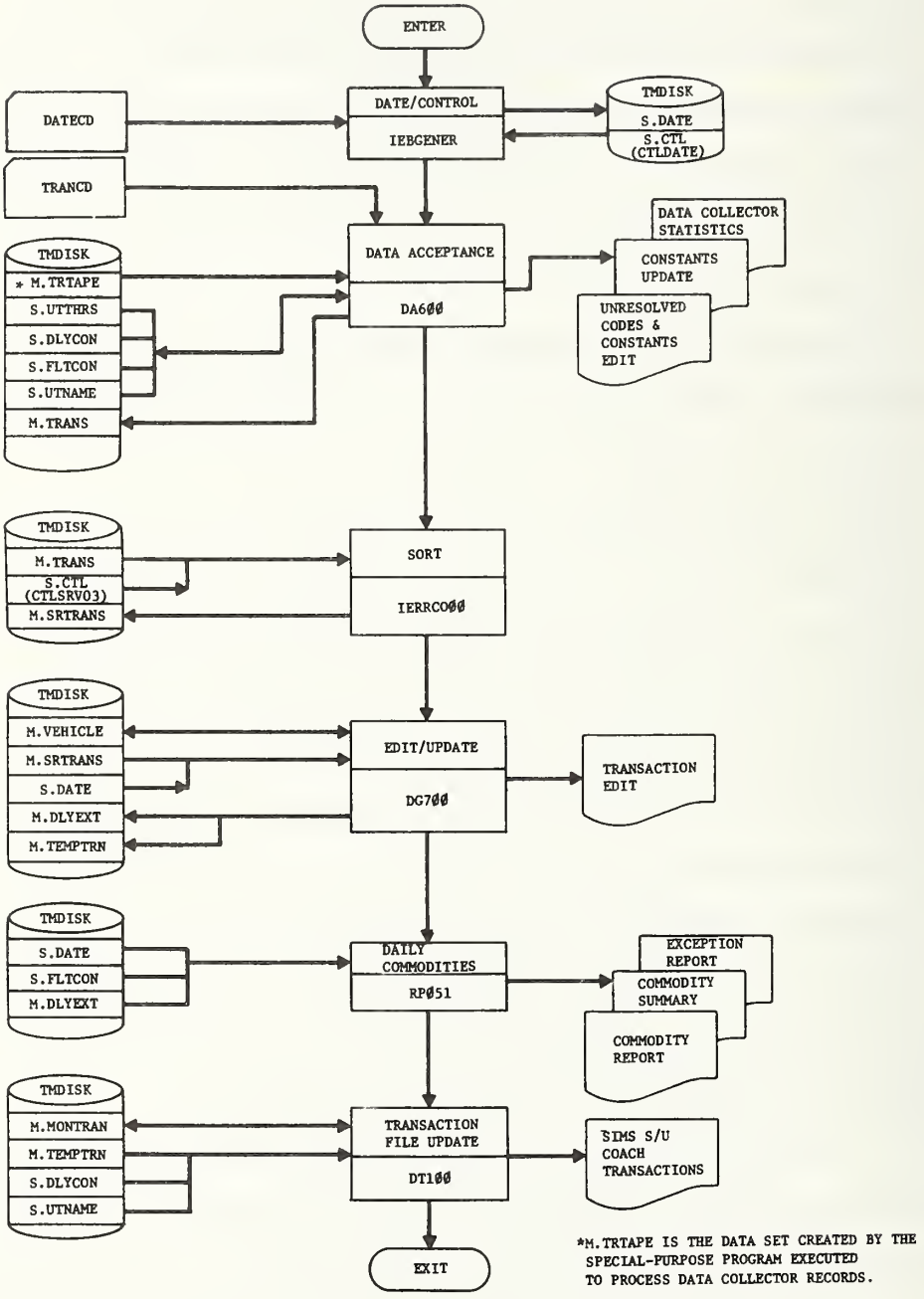

FIGURE 2.0-1
SIMS SERVICE/UNIT CHANGE SYSTEM FLOWCHART

transactions are listed in Tables 2.0-1 and 2.0-2, by transaction code and type.

The system maintains an S/U disk pack, TMDISK, and the Transaction Master File CN1510.SRV.M.TRANTAPE( ), which is a tape file. The disk pack contains the other system files and program libraries. Table 2.0-3 lists the major system files.

Two types of reports are produced by the system. The first type is produced automatically when the system files are updated. They are designed to display the transaction data entered to the user. The second type is on-demand reports. These are optional reports for which the user must make a request. They may be executed during the daily run or on a stand-alone basis. The reports are listed in Table 2.0-4, including the identity of each report generator program.

The SIMS S/U System has been implemented at ACTD and DTS under demonstrations sponsored by UMTA. In both applications, the system has been installed at a service bureau. For DTS, the system has been installed at the municipal computer center. The transit property supplies the daily file of transactions. ACTD also supplies the job deck; the municipal center prepares the job deck for DTS. The job deck includes request cards that control report generation and JCL cards that invoke stored procedures to execute the necessary programs. These procedures are specific to the transit property and to the computer center, although there are similarities in their content.

TABLE 2.0-1

CONSTANTS FILE TRANSACTIONS

Transaction Code	Transaction Type
C1	Service System Constants
C5,D5	Inspection Schedule Definition and Deletion
F1	Fleet Constants and Limits
U1	Group-Unit Description
T1,DT	Unit Threshold Value and Deletion

TABLE 2.0-2

VEHICLE TRANSACTIONS

Transaction Code	Transaction Type
19,D9	Vehicle Assignment/Vehicle Records and Deletion
02	Daily Miles
17	Vehicle Servicing Performed
03	Vehicle Inspection Performed
13	Unit Change Performed
15	Brake Reline Performed

TABLE 2.0-3

SIMS S/U MAJOR SYSTEM FILES

File Name	Data Set Name
Daily Constants File	S.DLYCON
Fleet Constants File	S.FLTCON
Unit Name File	S.UTNAME
Unit Thresholds File	S.UTTHRS
Vehicle Master File	M.VEHICLE ( )
Monthly Transaction File	M.MONTRAN ( )
Transaction Master File	M.TRANTAPE ( )

Notes: (a) All data set names are prefixed by 'CN1510.SRV.'.

(b) ( ) indicates that the file is a generation data set.

TABLE 2.0-4

SIMS S/U REPORTS

Report Title	Report Type	Generating Program
SIMS S/U Coach Transaction	D	DT100
Commodity Report	D	RP051
Commodity Usage	R	RP053
Bus Analysis	R	RP054
Unit Change Candidates	R	RP055
Brake Status	R	RP056
Units Changed Report	R	RP058
Unit Change Status	R	RP059
Coach History By Unit	R	RP064
Inspection Planning Report	R	RP066
Tire Mileage	R	PRTMIL

Note: Report types are:

(a) D - Daily

(b) R - Requested

3.0 SERVICE/UNIT CHANGE SYSTEM OUTPUTS

Outputs of the SIMS Service/Unit Change System can be divided into four classes:

(a) User Reports: There are 20 user reports that can be generated by the S/U System. These reports are listed in Table 3.0-1. They are designed to provide management with information necessary for effective maintenance operation, scheduling, and control. The reports are designed as either:

(1) Daily reports, which are generated automatically each time the system is run, or

(2) Weekly, monthly, or on-demand reports, produced on request from the user.

(b) Edit Reports: These reports are designed to alert the user to the entry of incorrect information into the system.

(c) File Listings: Reports have been designed to display records contained in the major system files, other than transaction files. These listings provide the user with a capability to verify that those records are correct.

(d) Error Messages: These messages are designed to indicate to system operators the cause of system malfunctions.

TABLE 3.0-1

USER REPORTS

Subsection Number	Frequency	Report Title	Generated By
3.1.1	Daily	SIMS S/U Coach Transactions - - Inspection Performed Notice - - Unit Changed/Rering/Overhaul - - Brake Job Done - - Buses Added/Deleted/Updated	DT100
3.1.2	Daily	Commodity Report Commodity Summary	RP051
3.1.3	Weekly	Commodity Usage	RP053
3.1.4	Monthly	Bus Analysis Bus Analysis Summary Bus Analysis Division/System Summary	RP054
3.1.5	Monthly	Unit Change Candidates	RP055
3.1.6	Monthly	Brake Status	RP056
3.1.7	Monthly	Inspections Done Units Changed Rering/Overhaul Jobs Brake Jobs	RP058
3.1.8	Monthly	Unit Change Status	RP059
3.1.9	On-Demand	Coach History By Unit	RP064
3.1.10	Weekly	Inspection Planning Report	RP066
3.1.11	Monthly	Tire Mileage	PRTMIL

3.1 User Reports

Each user report is described in the following subsections in terms of a brief explanation of the report's usefulness, a report specification, and a sample report. Each sample report displays the name of one of the two transit properties at which the system has been implemented. The name displayed is not contained in the code of the report generator program. The user specifies the name in the Job Control Language when the system procedures are developed.

3.1.1 SIMS S/U Coach Transactions Reports

The SIMS S/U Coach Transactions reports are regularly produced with each run of the system. They are designed primarily to permit the user to monitor the processing of selected types of transactions input to the system. These transaction types are:

(a) Inspections performed,

(b) Units changed,

(c) Brake relines performed, and

(d) Vehicle assignments.

Each report is produced if transactions of the type reported are processed. Within each report, information is displayed by vehicle number, in ascending order. For units changed, the information for each vehicle is in ascending date order.

The information displayed on the first three of the above reports consists of the Vehicle Master File record or records updated before and after the transaction was processed, together with the calculated value of miles traveled by the vehicle between the two events shown on the report. The information displayed on the Vehicle Assignments report consists only of the updated file record except when the original vehicle assignment transaction is processed. At this time, the accumulated vehicle mileage is also displayed.

The file records are reformatted for the purpose of printing the reports. This facilitates the use and interpretation of the reports by the user. It is used to verify the transactions entered in the

system and is a source of information to correct transactions erroneously entered.

The reports are:

(a) Inspection Performed Notice. Table 3.1-1 is the report specification. Figure 3.1-1 illustrates the report format.

(b) Unit Change/Rering/Overhaul. Transaction data reflected in this report include records of engine re-ring and engine overhaul work. Table 3.1-2 is the report specification. Figure 3.1-2 illustrates the report format.

(c) Brake Job Done. Table 3.1-3 is the report specification. Figure 3.1-3 illustrates the report format.

(d) Buses Added/Deleted/Updated. Transaction data reflected in this report include records of vehicles added to or deleted from the master file as well as changes in vehicle assignments. Table 3.1-4 is the report specification. Figure 3.1-4 illustrates the report format.

TABLE 3.1-1

REPORT SPECIFICATION
SIMS S/U COACH TRANSACTIONS
INSPECTION PERFORMED NOTICE

GENERATING PROGRAM: DT100

FREQUENCY: Daily

REPORT HEADER: SIMS S/U COACH TRANSACTIONS
PROCESSED MO/DA/YR

INSPECTION PERFORMED NOTICE

ORGANIZATION: Detail report lines are organized by bus number in ascending order.

CONTENTS:

COLUMN HEADER	DESCRIPTION
Bus	Bus Number
Date	Date on which inspection performed
Insp. Perf.	Inspection performed, identified by schedule and step codes
R	Code identifying reason for performance of inspection
Acc Miles	Accumulated miles traveled by bus when the inspection was performed
Service Miles	Miles traveled since the previous inspection was performed
Next Due	Next inspection scheduled, identified by schedule and step codes
Code	Code to identify transactions as an original transaction or a correction
File Data Replaced	Major heading for file data replaced
Date	Date of prior inspection performed
Last	Prior inspection performed, identified by schedule and step code
R	Code identifying reason for performance of prior inspection
Acc Miles	Accumulated miles traveled by bus when prior inspection performed
Due	Next inspection scheduled after prior inspection performed
Code	Code to identify transaction as original transaction or a correction

TABLE 3.1-2

REPORT SPECIFICATION
SIMS S/U COACH TRANSACTIONS
UNIT CHANGED/RERING/OVERHAUL

GENERATING PROGRAM: DT100

FREQUENCY: Daily

REPORT HEADER: SIMS S/U COACH TRANSACTIONS
PROCESSED MO/DA/YR

UNIT CHANGED/RERING/OVERHAUL

ORGANIZATION: Detail report lines are organized primarily by bus number, in ascending order. Secondary organization within bus number is by transaction date in ascending order.

CONTENTS:

COLUMN HEADER	DESCRIPTION
Bus	Bus number
Date	Date on which unit change, engine rering, or engine overhaul performed
Unit	Code identifying unit changed
R	Code identifying reason for unit change
Acc Miles	Accumulated miles traveled by the bus when the unit change was performed
Miles Since	Miles traveled by the bus since the previous change of the same type of unit
Code	Code identifying transaction as an original transaction or a correction
File Data Replaced	Major heading for file data replaced
Date	Date of prior unit change of the same type
R	Code identifying reason for prior unit change
Acc Miles	Accumulated miles traveled by the bus when prior unit change performed
Code	Code identifying transaction as an original transaction or a correction

TABLE 3.1-3

REPORT SPECIFICATION
SIMS S/U COACH TRANSACTIONS
BRAKE JOB DONE

GENERATING PROGRAM: DT100

FREQUENCY: Daily

REPORT HEADER: SIMS S/U COACH TRANSACTIONS
PROCESSED MO/DA/YR

BRAKE JOB DONE

ORGANIZATION: Detail report lines are organized by bus number in ascending order.

CONTENTS:

COLUMN HEADER	DESCRIPTION
Bus	Bus number
Date	Date on which brake job was performed
R	Code identifying reason for performance of brake job
Acc Miles	Accumulated miles traveled by the bus when the brake job was performed
Miles Since	Miles traveled by the bus since the prior complete brake job was performed
Line Code	Code identifying brake lining material used for complete brake job
Drum Sizes LF RF LR RR	Accumulated thickness (thousandths of an inch) of metal that has been removed from the brake drum, after the brake job is completed, on each of the four wheels LF Left front RF Right front LR Left rear RR Right rear
Code	Code to identify transaction as an original transaction or a correction
File Data Replaced	Major heading for file data replaced
Date	Date on which prior complete brake job performed
R	Code identifying reason for performance of prior brake job
Acc Miles	Accumulated miles traveled by the bus when prior complete brake job performed
Line Code	Code identifying brake lining material used for last complete brake job
Drum Sizes LF RF LR RR	Brake drum size, as defined above, after prior brake job performed

TABLE 3.1-4

REPORT SPECIFICATION
SIMS S/U COACH TRANSACTIONS
BUSES ADDED/DELETED/UPDATED

GENERATING PROGRAM: DT100

FREQUENCY: Daily

REPORT HEADER: SIMS S/U COACH TRANSACTIONS
PROCESSED MO/DA/YR

BUSES ADDED/DELETED/UPDATED

ORGANIZATION: Detail report lines are organized by bus number in ascending order.

CONTENTS:

COLUMN HEADER	DESCRIPTION
Bus	Bus number
SIMS Date	Date on which initial bus records entered in the Vehicle Master File
Year	Bus model year
Fleet	Fleet to which bus belongs
Division	Division or garage to which bus is assigned
Division Assign Date	Date on which bus assigned to division
Prior Division	Prior division to which bus was assigned
Accum Miles	Accumulated vehicle miles on SIMS date
Service Code	Code identifying type of transit service in which bus is primarily operated

AC TRANSIT
SIMS S/U COACH TRANSACTIONS
PROCESSED 10/09/73

INSPECTION PERFORMED NOTICE

BUS	DATE	INSP PERF.	R	ACC MILES	SERVICE MILES	NEXT DUE	CODE
100	08/23/73	0-00	0	0	0	1-01 6K	0
100	08/26/73	1-01	1	656,068	656,068	1-02 12K	0
101	08/23/73	0-00	0	0	0	2-01 9K	0
101	08/26/73	2-01	1	638,583	638,583	2-02 18K	0
102	08/23/73	0-00	0	0	0	2-01 9K	0
104	08/23/73	0-00	0	0	0	4-01 10K	0
104	08/26/73	4-01	1	794,246	794,246	4-02 20K	0
105	08/23/73	0-00	0	0	0	1-01 6K	0
105	08/26/73	1-01	1	770,471	770,471	1-02 12K	0
106	08/23/73	0-00	0	0	0	1-01 6K	0
106	08/26/73	1-01	1	809,181	809,181	1-02 12K	0
107	08/23/73	0-00	0	0	0	2-01 9K	0
107	08/26/73	2-01	1	833,860	833,860	2-02 18K	0
108	08/23/73	0-00	0	0	0	1-01 6K	0
108	08/26/73	1-01	1	867,197	867,197	1-02 12K	0
109	08/23/73	0-00	0	0	0	2-01 9K	0
109	08/26/73	2-01	1	807,146	807,146	2-02 18K	0

FILE DATA REPLACED

DATE	LAST	R	ACC MILES	DUE	CODE
00/00/00	0-00	0	0	0-00 0K	0
08/23/73	0-00	0	0	1-01 6K	0
00/00/00	0-00	0	0	0-00 0K	0
08/23/73	0-00	0	0	2-01 9K	0
00/00/00	0-00	0	0	0-00 0K	0
00/00/00	0-00	0	0	0-00 0K	0
08/23/73	0-00	0	0	4-01 10K	0
00/00/00	0-00	0	0	0-00 0K	0
08/23/73	0-00	0	0	1-01 6K	0
00/00/00	0-00	0	0	0-00 0K	0
08/23/73	0-00	0	0	1-01 6K	0
00/00/00	0-00	0	0	0-00 0K	0
08/23/73	0-00	0	0	2-01 9K	0
00/00/00	0-00	0	0	0-00 0K	0
08/23/73	0-00	0	0	1-01 6K	0
00/00/00	0-00	0	0	0-00 0K	0
08/23/73	0-00	0	0	2-01 9K	0

FIGURE 3.1-1
INSPECTION PERFORMED REPORT

AC TRANSIT
SIMS S/U COACH TRANSACTIONS
PROCESSED 10/09/73

UNIT CHANGED / RERING / OVERHAUL

BUS	DATE	UNIT	R	ACC MILES	MILES SINCE	CODE		FILE DATA REPLACED DATE	R	ACC MILES	CODE
640	08/26/73	30-06	3	192,810	192,356	0	BRAKE RELAY VALVE	04/02/73	3	454	0
654	08/26/73	30-06	3	181,101	180,966	0	BRAKE RELAY VALVE	04/02/73	3	135	0
912	08/26/73	30-06	3	95,659	94,853	0	BRAKE RELAY VALVE	04/02/73	3	806	0
931	08/26/73	30-06	3	40,230	39,925	0	BRAKE RELAY VALVE	04/02/73	3	305	0
936	08/26/73	08-98	3	36,306	35,900	0	RE-RING	04/02/73	3	406	0
936	08/26/73	08-99	3	36,306	35,900	0	OVERHAUL	04/01/73	3	406	0
941	08/26/73	08-98	3	34,061	33,705	0	RE-RING	04/02/73	3	356	0
941	08/26/73	08-99	3	34,061	33,705	0	OVERHAUL	04/01/73	3	356	0
964	08/26/73	08-98	3	46,670	46,404	0	RE-RING	04/02/73	3	266	0
964	08/26/73	08-98	3	46,670	0	0	RE-RING	08/26/73	3	46,670	0
969	08/26/73	08-98	3	38,550	38,098	0	RE-RING	04/02/73	3	452	0
1854	08/26/73	08-98	3	815,135	114,781	0	RE-RING	04/02/73	3	700,354	0

FIGURE 3.1-2
UNIT CHANGE/RERING/OVERHAUL REPORT

AC TRANSIT
SIMS S/U COACH TRANSACTIONS
PROCESSED 10/09/73

BRAKE JOB DONE

BUS	DATE	R	ACC MILES	MILES SINCE	LINE CODE	*--DRUM SIZES--* LF	RF	LR	RR	CODE
110	08/24/73	3	364,699	0	ABFF	95	95	27	27	0
124	08/24/73	3	308,296	0	ABFF	203	203	89	89	0
125	08/24/73	3	283,884	0	ABFF	11	11	7	7	0
560	08/24/73	3	289,456	0	ABFF	28	28	5	5	0
642	08/24/73	3	172,525	0	ABFF	182	182	251	251	0
809	08/24/73	3	174,528	0	ABFF	133	133	150	150	0
927	08/24/73	3	143,499	0	ABFF	128	128	177	177	0
1861	08/24/73	3	103,191	0	ABFF	132	132	130	130	0
2100	08/24/73	3	148,185	0	ABFF	106	106	163	163	0

FILE DATA REPLACED

DATE	R	ACC MILES	LINE CODE	*--DRUM SIZES--* LF	RF	LR	RR
00/00/00	0	0	0000				
00/00/00	0	0	0000				
00/00/00	0	0	0000				
00/00/00	0	0	0000				
00/00/00	0	0	0000				
00/00/00	0	0	0000				
00/00/00	0	0	0000				
00/00/00	0	0	0000				
00/00/00	0	0	0000				

FIGURE 3,1-3
BRAKE JOB DONE REPORT

AC TRANSIT
SIMS S/U COACH TRANSACTIONS
PROCESSED 05/22/74

BUSES ADDED / DELETED / UPDATED

BUS	SIMS DATE	YEAR	FLEET	DIVISION	DIVISION ASSIGN DATE	PRIOR DIVISION	ACCUM MILES	SERVICE CODE	
100	04/10/74	70	01	03	04/10/74	00	1,000	00	NEW VEHICLE
120	04/10/74	70	03	03	04/10/74	00	2,000	00	NEW VEHICLE
900	04/10/74	70	01	03	04/10/74	00	0	00	NEW VEHICLE

FIGURE 3.1-4
BUSES ADDED/DELETED/UPDATED REPORT

3.1.2 Commodity Reports

The commodity reports are daily reports, designed to enable the user to monitor the quantities of consumables (fuel, oil, and coolant) used and associate this information with miles traveled. There are two reports:

(a) Commodity Report: This report lists the information for each vehicle operated. The report is organized by division, and by vehicle number in ascending order within the division.

(b) Commodity Summary: This report displays totals by division and for the system.

There are two versions of the Commodity Report. The basic version displays consumables and mileage information. A modified version of the report provides additional information to aid management in the effective scheduling of vehicle inspections. Month-to-date mileage information is replaced by mileage since the last inspection and the identity of the next inspection due.

The user may request the Commodity Report in the form of:

(a) a complete listing of all vehicles for which there are mileage or servicing records for the report date.

(b) an exception report, listing vehicles:

  (1) for which there is more than one servicing record for the report date.

  (2) that have been flagged in accord with program criteria (see Section 7.6).

Tables 3.1-5 and 3.1-6 describe the report specifications. Figures 3.1-5 and 3.1-6 illustrate the formats of the reports. Figure 3.1-5 includes illustrations of both versions of the Commodity Report.

TABLE 3.1-5

REPORT SPECIFICATION
COMMODITY REPORT

GENERATING PROGRAM: RPØ51A, RPØ51D

FREQUENCY: Daily

REPORT HEADER: THE COMMODITY REPORT
FOR DAY MO/DA/YR

ORGANIZATION: The report contains a section for each division within the property. Within each division report, detail report lines are organized by bus number in ascending order. For each bus, there are as many report lines as there are servicing transactions on the report date.

CONTENTS:

COLUMN HEADER	DESCRIPTION
Bus No.	Bus number
Accum Miles	Accumulated miles traveled by the bus, as of report date
Month Miles To Date (A)	Miles traveled by the bus during the current month, as of report date
Miles today	Miles traveled by the bus on report date
Commodities Dispensed	Quantities of commodities dispensed to the bus on report date:
Fuel - Gals	Gallons of fuel
Oil - Qts	Quarts of motor oil
Cool - Qts	Quarts of coolant
Term ID	Identification number of data collector terminal

(A) Appears if user does not elect option of entering inspection performed transactions and is executing RP051A. If user does so elect, then RP051D should be the generator program and this column is replaced by:

Miles Since	Miles traveled by the bus since the last inspection as of report date
Insp Due	
Type	Type of inspection due, identified in thousand miles
Step	Code identifying inspection schedule and next inspection step to be performed

TABLE 3.1-6

REPORT INSPECTION
COMMODITY SUMMARY

GENERATING PROGRAM: RPØ51A, RP051D

FREQUENCY: Daily

REPORT HEADER: COMMODITY SUMMARY
FOR DAY MO/DA/YR

ORGANIZATION: Detail report lines are organized by division and a system total line is printed.

CONTENTS:

COLUMN HEADER	DESCRIPTION
Miles Today	Total miles traveled by buses in each division
Fuel Gal	Total gallons of fuel used by buses in each division
Oil Qts	Total quarts of oil used by buses in each division
Cool Qts	Total quarts of coolant used by buses in each division

AC TRANSIT
COMMODITY REPORT
FOR DAY 08/23/73

DIVISION 02

BUS NO	ACCUM MILES	MONTH MILES TO DATE	MILES TODAY	* COMMODITIES DISPENSED * FUEL GALS	OIL QTS	COOL QTS	TERM ID
100	655,926	2,121	66	29.4	0.0	1	103-
101	638,459	2,122	107	19.2	2.2	0	100-
102	661,141	2,898	108	19.3	0.0	0	100-
103	756,293	2,212	90	0.0*	0.0	0	-
104	793,894	2,506	93	16.2	2.0	0	100-
105	770,005	2,597	298	44.0	0.0	0	103-
106	809,073	2,944	88	16.6	2.0	2	103-
107	833,452	3,276	69	9.2	0.0	3	100-
108	866,630	2,589	77	10.6	1.9	0	100-
109	806,797	1,867	51	0.0*	0.0	0	-
110	827,786	4,034	78	9.4	2.9	3	103-
111	814,803	3,308	95	0.0*	0.0	0	-
112	646,393	2,052	97	15.0	0.0	0	100-
113	721,045	5,735	349	0.0*	0.0	0	-
114	657,828	5,226	389	0.0*	0.0	0	-
115	663,359	1,220	49	0.0*	0.0	0	-
116	669,584	5,256	366	58.6	2.1	2	100-
117	668,075	4,872	64	0.0*	0.0	0	-
118	649,445	3,128	243	40.7	0.0	1	100-
119	615,350	5,520	346	54.8	1.9	0	103-
120	674,471	3,726	214	36.2	0.0	1	103-
121	669,238	3,613	244	0.0*	0.0	0	-
122	661,156	3,434	170	0.0*	0.0	0	-
175	346,685	2,720	0	0.0	0.0	0	-
176	334,818	2,450	139	0.0*	0.0	0	-
300	500,811	3,180	240	43.1	0.0	4	103-
301	485,635	3,648	215	0.0*	0.0	0	-
302	496,748	3,339	55	11.3	0.0	2	103-
303	502,879	3,121	150	77.7	0.0	0	100-
304	496,254	3,226	152	0.0*	0.0	0	-

FIGURE 3,1-5
COMMODITY REPORT

AC TRANSIT
COMMODITY REPORT
FOR DAY 06/29/73

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08/14/73

DIVISION 04

BUS NO	ACCUM MILE	MILES SINCE LAST INSP	INSP TYPE	DUE STEP	MILES TODAY	* COMMODITIES DISPENSED * FUEL GALS	OIL QTS	COOL QTS	TERM ID
2032	670,704	2,574	12K	1-02	0*	23.0	0.0	0	102-
2033	677,892	2,817	12K	1-02	0*	2.7	0.0	5	105-5
2034	669,275	2,940	12K	1-02	0	0.0	0.0	0	-
2035	674,576	2,945	12K	1-02	0*	17.3	0.0	0	102-
2036	679,554	3,343	12K	1-02	0	0.0	0.0	0	-
2037	682,802	3,003	12K	1-02	0*	14.5	0.0	6#	107-2
2038	674,083	3,010	12K	1-02	0	0.0	0.0	0	-
2039	676,130	3,291	12K	1-02	0*	17.3	0.0	0	105-5
2040	690,626	3,164	12K	1-02	0*	10.4	0.0	8#	107-2
2041	704,037	3,549	12K	1-02	0*	14.9	0.0	6#	107-2
2042	697,177	3,221	12K	1-02	0*	12.0	0.0	0	107-2
2043	689,877	3,262	12K	1-02	0*	15.1	0.0	0	107-2
2044	683,689	3,369	12K	1-02	0*	16.7	2.0	0	105-5
2045	697,861	2,786	12K	1-02	0*	10.2	0.0	5	107-2
2046	696,300	3,334	12K	1-02	0*	9.4	0.0	0	105-5
2047	703,941	3,637	12K	1-02	0*	13.9	0.0	9#	107-2
2048	701,538	2,046	12K	1-02	0*	15.3	0.0	0	107-2
2049	693,546	869	0K	0-01	0*	27.0	0.0	0	107-2
3077	435,154	2,936	0K	0-01	0*	6.3	0.0	0	105-
DIVISION TOTALS					0	7,909.4	93.3	260	

FIGURE 3.1-5 (CONCLUDED)
COMMODITY REPORT (MODIFIED)

AC TRANSIT
COMMODITY SUMMARY
FOR DAY 08/23/73

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	MILES TODAY	* COMMODITIES DISPENSED * FUEL GALS	OIL QTS	COOL QTS
DIVISION 02	30,726	3,873.6	104.9	211
DIVISION 03	13,872	2,554.9	69.4	210
DIVISION 04	36,928	4,418.5	88.4	224
SYSTEM TOTALS	81,526	10,847.0	262.7	645

END-OF-REPORT R-51. PRINTED 10/09/73 BY RP051.

FIGURE 3.1-6
COMMODITY SUMMARY REPORT

3.1.3 Commodity Usage Report

The Commodity Usage report is an on-demand report, requested weekly. It is designed to draw the attention of management to vehicles that are potential maintenance problems. The report also permits the monitoring of the usage of consumables over a four-week period, thus detecting trends not visible in the daily reports.

The report displays quantities of consumables used each day in the prior 28-day period, and associates these quantities with mileage traveled in the form of 7-day and 28-day averages (miles per gallon and miles per quart). During report generation, these averages are tested against user-specified limits; values outside these limits are flagged (see Section 7.7).

Three report options are available:

(a) a complete listing of all vehicles;

(b) an exception report, listing those vehicles that violate 28-day commodity usage limits; and

(c) an exception report, listing those vehicles that violate 28-day or 7-day commodity usage limits.

Table 3.1-7 describes the report specifications. Figure 3.1-7 illustrates the report.

TABLE 3.1-7

REPORT SPECIFICATION
COMMODITY USAGE REPORT

GENERATING PROGRAM: RP053

FREQUENCY: Weekly

REPORT HEADER: COMMODITY USAGE FOR WEEK ENDING MO/DA/YR

ORGANIZATION: The report contains a section for each division within the property. Within each division report, detail report lines are organized by bus number in ascending order.

CONTENTS:

COLUMN HEADER	DESCRIPTION
Week-Ending MO/DA	Days of week ending with date
Bus	Bus number
28 Days: Miles	Miles traveled for 28-day period
MPG:	Average miles per gallon of fuel for 28 days
MPQ:	Average miles per quart of oil for 28 days
Coolant (Qts):	Coolant used for 28 days
F	Fuel used each day of period
O	Oil used each day of period
C	Coolant used each day of period
M	Miles traveled for week
MPG	Average miles per gallon of fuel for week
MPQ	Average miles per quart of oil for week

AC TRANSIT

DIVISION 02 — COMMODITY USAGE FOR WEEK ENDING 08/25/73 — PAGE 1

	----WEEK-ENDING 07/04----							*----WEEK-ENDING 08/11----*							*----WEEK-ENDING 08/18----*							*----WEEK-ENDING 08/25----*						
	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
100 = BUS				28 DAYS: MILES:				2,477			MPG: 5.82							MPQ: 314							COOLANT(QTS): 42						
F	0	21	15	12	29	17	31	20	28	18	11	33	25	0	0	15	16	10	48	0	17	20	7	5	0	29	0	0
D	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0
C	0	5	0	1	4	1	0	0	0	7	1	5	0	0	0	6	0	4	0	0	0	3	3	1	0	1	0	0
M	650 MPG			5.23 MPQ			325	M 721 MPG			5.32 MPQ			379	M 612 MPG			5.85 MPQ			306	M 494 MPG			8.09* MPQ			247
101 = BUS				28 DAYS: MILES:				2,417			MPG: 5.50							MPQ: 151*							COOLANT(QTS): 19						
F	8	10	0	33	24	21	7	19	37	31	0	10	26	0	0	73	14	20	14	21	7	8	11	8	0	19	13	6
D	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	2	0	0	3	2	0	0	0	0	0	2	2	0
C	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	11	0	0	0	0	0	1	1
M	620 MPG			5.94 MPQ			0	M 804 MPG			6.52 MPQ			164	M 541 MPG			3.65 MPQ			78	M 452 MPG			7.05* MPQ			108
102 = BUS				28 DAYS: MILES:				3,321			MPG: 5.79							MPQ: 261							COOLANT(QTS): 23						
F	7	17	45	21	21	14	9	24	15	21	19	43	50	0	26	21	15	17	11	62	4	9	17	13	30	19	22	0
D	0	2	0	2	0	2	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	2	0	0	0	0	2	0
C	3	0	0	0	2	0	0	2	0	0	3	0	1	0	0	0	0	0	3	0	5	1	0	0	2	0	1	0
M	636 MPG			6.69 MPQ			112	M 1,024 MPG			5.95 MPQ			0	M 1,009 MPG			6.46 MPQ			336	M 652 MPG			5.94* MPQ			163
103 = BUS				23 DAYS: MILES:				2,528			MPG: 6.32							MPQ: 258							COOLANT(QTS): 19						
F	7	7	16	11	13	17	0	19	12	25	22	12	23	31	0	11	19	17	35	9	0	0	42	42	11	0	0	0
D	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	2	0	0	0	2	0	0	0	0	2	0	0	0
C	0	0	0	0	0	0	0	4	1	0	3	0	2	0	0	3	0	0	0	3	0	0	0	0	3	0	0	0
M	433 MPG			5.19 MPQ			0	M 814 MPG			5.64 MPQ			209	M 458 MPG			5.03 MPQ			117	M 823 MPG			8.67* MPQ			412
104 = BUS				28 DAYS: MILES:				2,999			MPG: 6.83							MPQ: 303							COOLANT(QTS): 6						
F	1	19	7	7	57	0	0	26	15	38	15	11	32	33	45	10	6	0	14	9	0	0	54	10	14	16	0	0
D	0	2	0	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	2	0	0
C	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0
M	627 MPG			6.83 MPQ			314	M 958 MPG			5.67 MPQ			479	M 491 MPG			5.85 MPQ			126	M 923 MPG			9.82* MPQ			462
105 = BUS				28 DAYS: MILES:				3,198			MPG: 6.61							MPQ: 400							COOLANT(QTS): 20						
F	0	15	11	11	52	14	0	30	10	16	26	8	21	52	0	14	12	10	28	11	0	0	12	16	16	44	0	56
D	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	2	0	0	0	2
C	0	0	0	0	0	4	0	0	3	1	1	0	0	2	0	2	0	1	3	0	0	0	0	0	0	0	0	3
M	651 MPG			6.38 MPQ			0	M 1,028 MPG			6.30 MPQ			514	M 434 MPG			5.84 MPQ			228	M 1,085 MPG			7.51* MPQ			265
106 = BUS				28 DAYS: MILES:				3,194			MPG: 6.56							MPQ: 248							COOLANT(QTS): 39						
F	0	12	14	12	13	11	31	28	9	0	15	13	10	52	0	11	20	39	57	53	0	0	6	54	11	17	0	0
D	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	2	3	0	0	0	0	0	2	2	0	0
C	0	0	5	3	0	0	3	4	3	0	0	3	1	0	0	0	0	4	0	2	0	0	2	0	7	2	0	0
M	560 MPG			5.03 MPQ			0	M 849 MPG			6.64 MPQ			447	M 1,146 MPG			6.39 MPQ			164	M 639 MPG			7.34* MPQ			160
107 = BUS				28 DAYS: MILES:				3,796			MPG: 6.09							MPQ: 759							COOLANT(QTS): 91@						
F	0	12	9	40	0	5	56	0	18	7	13	11	12	60	0	53	51	9	66	0	0	0	35	38	51	9	23	45
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	3	0	0	0	0
C	0	0	13	17	0	0	4	0	2	7	0	2	5	5	0	6	6	0	4	0	0	0	0	4	5	3	3	5@
M	725 MPG			5.91 MPQ			0	M 689 MPG			5.68 MPQ			0	M 1,143 MPG			6.37 MPQ			572	M 1,239 MPG			6.18* MPQ			413

FIGURE 3.1-7
COMMODITY USAGE REPORT

3.1.4 Bus Analysis Reports

The Bus Analysis reports are monthly reports, generated on-demand. They are designed to enable the user to monitor individual vehicle performance on a monthly basis. The information displayed consists of cost data and the type of commodity data shown on the Commodity Usage report.

Three reports are produced:

(a) Bus Analysis: This report is designed for the Division Maintenance Supervisor. It displays information for each vehicle at a division. The report is organized by fleet and by vehicle number in ascending order within fleet.

(b) Bus Analysis Summary: This report is designed for the Maintenance Superintendent. It displays information in terms of fleet totals. Vehicle performance can be reviewed in these terms.

(c) Bus Analysis Division/System Summary: This report is also designed for the Maintenance Superintendent. Operating results for each division and for the system are displayed, thus providing a comparison among divisions.

The type of information displayed on each of these reports varies slightly. Tables 3.1-8 through 3.1-10 describe the specifications of the reports, which are illustrated in Figures 3.1-8 through 3.1-10.

TABLE 3.1-8

REPORT SPECIFICATION
BUS ANALYSIS REPORT

GENERATING PROGRAM: RPØ54

FREQUENCY: Monthly

REPORT HEADER: BUS ANALYSIS
FOR MONTH ENDING MO/DA/YR

ORGANIZATION: The report contains a section for each division within the property. Each division section is sub-sectioned by fleet. Within each fleet sub-section report, detail report lines are organized by bus number in ascending order.

CONTENTS:

COLUMN HEADER	DESCRIPTION
Bus No	Bus Number
Yr	Bus Model Year
Cents/Mile	Commodities cost per mile in cents
Miles	Miles traveled by bus during month of report
Fuel Gals	Fuel used during month
Fuel MPQ	Average miles per gallon of fuel
Oil Qts	Oil used during month
Oil MPQ	Average miles per quart of oil, report month
Last Month	Average miles per quart of oil, first previous month
2nd Month	Average miles per quart of oil, second previous month
3rd Month	Average miles per quart of oil, third previous month
Miles Since Re-Ring	Miles since re-ring or overhaul in thousands of miles. An overhaul is indicated by an M.

TABLE 3.1-9

REPORT SPECIFICATION
BUS ANALYSIS SUMMARY

GENERATING PROGRAM: RPØ54

FREQUENCY: Monthly

REPORT HEADER: BUS ANALYSIS SUMMARY
FOR MONTH ENDING MO/DA/YR

ORGANIZATION: The report contains a detail line for each fleet.

CONTENTS:

COLUMN HEADER	DESCRIPTION
Fleet	Fleet number
No. of Buses	Number of buses in fleet
Miles Accum Bus Average	Average accumulated mileage per bus in fleet
Miles Month Total	Total mileage for all buses in fleet
Miles Bus Average	Average mileage per bus in fleet
Fuel MPG	Average miles per gallon of fuel per bus in fleet
Oil MPQ	Average miles per quart of oil per bus in fleet
Commodity Cost Total Dollars	Total cost in dollars for commodities per fleet
Cents per Mi	Commodity cost per mile for fleet
Fuel Cost $/Gal	Fuel cost per gallon for fleet

TABLE 3.1-10

REPORT SPECIFICATION
BUS ANALYSIS DIVISION/SYSTEM SUMMARY

GENERATING PROGRAM: RPØ54

FREQUENCY: Monthly

REPORT HEADER: BUS ANALYSIS
DIVISION/SYSTEM SUMMARY
FOR MONTH ENDING MO/DA/YR

ORGANIZATION: Detail report line for each division within the property and as system summary total line.

CONTENTS:

COLUMN HEADER	DESCRIPTION
Div	Division number
No. of Buses	Number of buses in division
Miles Month Total	Total mileage of buses in division
Miles Bus Avg	Bus average mileage in division
Fuel Gal. Total	Total fuel used by division
Bus Avg MPG	Average bus miles per gallon of fuel within division
Oil Qts Total	Total oil used by division
Oil Bus Avg MPQ	Average bus miles per quart of oil within division
Commodity Cost Total Dollars	Total commodity cost in dollars for division
Commodity Cost Cent per Mile	Average commodity cost per mile within division

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BUS ANALYSIS
FOR MONTH ENDING 08/28/73

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FLEET 09

DIVISION 04

FUEL COST=$.122/GAL
OIL COST=$.113/QT
COOLANT COST=$.048/QT

BUS NO.	YR	THIS MONTH CENTS /MILE	MILES	FUEL GALS	FUEL MPG	OIL QTS	OIL MPQ	OIL MPQ LAST 3 MOS. LAST MONTH	2ND MONTH	3RD MONTH	MILES SINCE RE-RING
915	71	2.10	4,325	822.4	5.87	8.7	555	488	403	474	122K-M
916	71	1.86	4,561	700.8	6.65	7.0	666	438	404	380	56K
917	71	2.28	2,863	529.5	5.42	2.2	1,304	464	567	625	130K-M
918	71	2.43	3,736	733.3	5.09	5.8	644	585	599	1,553	153K-M
919	71	2.58	3,020	626.9	4.82	12.5	242	881	394	162	22K
920	71	2.12	3,518	600.8	5.86	7.9	445	2,096	788	776	48K
921	71	1.79	5,390	777.3	6.93	11.2	481	576	615	383	44K
922	71	2.18	3,314	583.7	5.68	3.7	896	986	1,554	483	41K
923	71	2.03	4,484	737.6	6.08	6.9	650	669	488	708	134K-M
924	71	2.23	5,550	998.1	5.56	14.2	391	672	679	542	173K-M
925	71	2.45	3,393	765.8	5.09	15.7	248	337	414	498	145K-M
926	71	2.03	4,514	746.7	6.05	4.0	1,129	440	412	418	157K-M
927	71	2.33	4,083	765.8	5.33	11.7	349	247	481	288	133K-M
928	71	2.12	273	48.2	5.77	0.0	0	666	1,363	845	115K-M
929	71	1.69	4,782	650.0	7.36	8.6	556	384	651	132	10K
930	00	2.57	3,597	745.9	4.82	10.2	353	536	1,105	469	42K-M
931	00	2.43	3,553	702.8	5.05	6.0	592	225	540	308	40K-M
932	00	2.75	3,264	722.9	4.52	14.6	224	341	724	286	44K-M
933	00	2.98	3,374	814.1	4.14	10.6	318	872	503	313	41K-M
934	00	2.49	3,588	719.8	4.98	14.9	241	486	1,346	515	42K-M
935	00	2.60	3,306	689.7	4.79	11.8	280	469	538	326	42K-M
936	00	2.26	2,491	456.7	5.45	6.0	415	613	562	731	36K-M
937	00	2.05	3,451	577.0	6.00	5.9	587	346	595	278	38K-M
938	00	2.41	4,340	844.2	5.14	16.1	270	361	682	351	37K-M
939	00	2.64	3,433	729.7	4.70	14.6	235	306	1,038	457	39K-M
940	00	2.62	4,183	883.1	4.74	13.9	301	340	782	380	41K-M
941	00	2.57	3,374	697.9	4.83	13.8	244	510	506	359	34K-M
942	00	2.80	4,370	988.0	4.42	14.0	312	378	536	340	38K-M
943	00	2.43	4,155	813.0	5.11	16.9	246	230	699	437	38K-M
944	00	2.47	3,451	633.2	5.05	15.1	229	323	630	458	32K-M

FIGURE 3.1-8
BUS ANALYSIS REPORT

AC TRANSIT
BUS ANALYSIS
SUMMARY
FOR MONTH-ENDING 08/28/73

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FLEET SUMMARY

OIL COST=$.113/QT
COOLANT COST=$.048/QT

FLEET	NO OF BUSES	*MILES* ACCUM BUS AVERAGE	THIS MONTH MILES TOTAL	THIS MONTH MILES BUS AVERAGE	BUS AVERAGE FUEL MPG	BUS AVERAGE OIL MPQ	*COMMODITY COST* TOTAL DOLLARS	CENTS PER MI	FUEL COST $/GAL.
01	62	707,566	229,542	3,702	6.91	347	4,135	1.80	0.122
03	65	416,798	223,813	3,443	4.99	323	5,563	2.49	0.122
04	50	575,163	150,083	3,002	5.31	225	3,530	2.35	0.122
05	100	580,769	207,303	2,073	5.90	293	4,385	2.12	0.122
06	54	346,154	149,776	2,774	5.50	255	3,393	2.27	0.122
01	1	181,101	2,429	2,429	5.09	517	59	2.42	0.122
06	26	184,020	75,143	2,890	5.25	270	1,780	2.37	0.122
07	93	484,153	311,954	3,354	5.86	265	6,651	2.13	0.122
08	66	43,934	149,997	2,273	5.41	424	3,429	2.29	0.122
09	89	75,505	328,814	3,695	5.40	356	7,543	2.29	0.122
17	18	741,414	6,417	357	5.02	198	161	2.50	0.122
18	1	755,859	0	0	0.00	0	0	0.00	0.122
17	30	694,204	15,911	530	5.18	221	385	2.42	0.122
18	40	693,601	22,851	571	5.41	139	537	2.35	0.122
19	25	685,237	8,698	348	4.95	114	224	2.57	0.122
20	50	754,566	49,420	988	5.44	126	1,159	2.35	0.122
21	21	555,485	25,689	1,223	6.07	265	530	2.06	0.122
30	2	225,785	2,958	1,479	4.66	365	78	2.65	0.122

FIGURE 3.1-9
BUS ANALYSIS SUMMARY REPORT

AC TRANSIT
BUS ANALYSIS
DIVISION/SYSTEM SUMMARY
FOR MONTH ENDING 08/28/73

PAGE 1
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DIVISION SUMMARY

FUEL COST=$.122/GAL
OIL COST=$.113/QT
COOLANT COST=$.048/QT

D I V	NO OF BUSES	*-----MILES----* MONTH TOTAL	BUS AVG	*---FUEL----* GAL TOTAL	BUS AVG MPG	*---OIL----* QTS TOTAL	BUS AVG MPQ	* COMMODITY COST* TOTAL DOLLARS	CENTS PER MILE
02	284	737,022	2,595	132,818	5.55	2,318	318	16,506	2.24
03	158	316,973	2,006	57,102	5.55	1,410	225	7,147	2.25
04	351	906,803	2,583	159,630	5.68	3,167	286	19,888	2.19

SYSTEM SUMMARY

	793	1,960,798	2,473	349,550	5.61	6,896	284	43,541	2.22

FIGURE 3.1-10
BUS ANALYSIS DIVISION/SYSTEM SUMMARY REPORT

3.1.5 Unit Change Candidates Report

The Unit Change Candidates report is an on-demand report. It is normally requested on a monthly basis. The report is designed to assist maintenance management to schedule unit change work and to monitor the service life of each unit installed.

The report lists each unit that is a candidate for change and the vehicle on which it is installed. Pre-specified test values (or threshold values) are established by the user for each type of unit. These values are specified for each fleet. A unit becomes a candidate if the vehicle has traveled more than the specified threshold mileage since the unit was installed.

Table 3.1-11 describes the report specifications. Figure 3.1-11 illustrates the report.

TABLE 3.1-11

REPORT SPECIFICATION
UNIT CANDIDATES REPORT

GENERATING PROGRAM: RPØ55

FREQUENCY: Monthly

REPORT HEADER: UNIT CHANGE CANDIDATES
AS OF MO/DA/YR

ORGANIZATION: By ascending bus number within each unit

CONTENTS:

COLUMN HEADER	DESCRIPTION
Bus No.	Bus Number
Since Change	Mileage in thousands since unit was last changed
Threshold	Threshold mileage in thousands of miles

AC TRANSIT
UNIT CHANGE CANDIDATES

0701 STARTER
AS OF 03/31/74

BUS NO.	*** SINCE CHANGE	MILES (IN THOUS.)	*** THRESHOLD
1903	57		55
1905	74		55
1908	64		55
1914	70		55
1915	70		55
1916	57		55
1917	58		55
1924	76		55
2015	57		55
2107	63		55

FIGURE 3.1-11
UNIT CHANGE CANDIDATES REPORT

3.1.6 Brake Status Report

The Brake Status report is an on-demand report. It is generally requested monthly. The report is designed to assist maintenance management to:

(a) identify brake work to be scheduled and

(b) monitor the status of the brake system on each vehicle.

For each vehicle, the report displays the sizes of brake drums, a code for the lining material used at the last brake reline, and the accumulated mileage traveled by the vehicle at that time. Brake drum size is defined as the accumulated thickness of metal removed from the drum since it was installed. The thickness is expressed in thousandths of an inch.

Threshold values for drum size and service mileage are pre-specified by the user. Drum sizes and mileages that exceed those test values are flagged on the report.

Two report options are available:

(a) a complete listing of every vehicle on file or

(b) a listing of those vehicles that have exceeded one or both of the two types of test values.

Table 3.1-12 describes the report specifications. The report is illustrated in Figure 3.1-12.

TABLE 3.1-12

REPORT SPECIFICATION
BRAKE STATUS REPORT

GENERATING PROGRAM: RP056

FREQUENCY: Monthly

REPORT HEADER: BRAKE STATUS FOR MO. YR
FOR PROCESSING DATE MO/DA/YR

ORGANIZATION: A detail report line is printed for each bus. Buses are sequenced in ascending order.

CONTENTS:

COLUMN HEADER	DESCRIPTION
Bus No.	Bus Number
Drum L.F.	Left front drum size (drum metal removed in thousandths of an inch)
Drum R.F.	Right front drum size (drum metal removed in thousandths of an inch)
Drum L.R.	Left rear drum size (drum metal removed in thousandths of an inch)
Drum R.R.	Right rear drum size (drum metal removed in thousandths of an inch)
Lining Code	Brake lining code
Miles Since Last Reline	Service miles since brakes were last relined

DALLAS TRANSIT
BRAKE STATUS FOR MAY 73
FOR PROCESSING DATE 07/02/73

* OVER THRESHOLD

BUS NO.	DRUM SIZE IN L.F.	R.F.	THOUSANDTHS L.R.	R.R.	LINING CODE	MILES SINCE LAST RELINE
0496	083	083	014	014	NR	38850
0497	065	065	086	086	NR	36958
0498	065	065	087	086	NR	42742
0499	078	078	075	075	NR	41247
0501	123	101	168	170	W8FF	37440
0502	164	164	078	075	A8FF	34520
0503	078	079	085	085	NR	44843
0504	111	111	113	113	NR	6494
0505	118	125	115	115	A8FF	2099
0506	102	102	115	115	THEE	13545
0507	075	065	068	068	NR	73826*
0508	121	119	120	124	A8FF	19738
0509	230	230	209	209	A8FF	66299*
0510	265	265	205	205	W8FF	34086
0511	152	152	091	090	NR	58117*
0512	081	081	144	144	A8FF	17854
0513	197	197	183	184	A8FF	34378
0601	061	061	082	082	A8FF	9908
0602	067	067	113	113	NR	11621
0603	065	066	083	088	NR	16405
0604	083	083	117	117	NR	2759
0605	058	058	102	102	A8FF	21157
0606	097	097	098	098	A8FF	1810
0607	060	060	105	105	NR	12610
0608	047	047	066	066	A8FF	3220
0609	097	092	058	058	A8FF	7954
0610	072	072	085	085	A8FF	5794
0611	064	064	070	070	A8FF	11110
0612	065	065	118	118	A8FF	10978
0613	056	056	117	117	A8FF	1045
0614	080	108	083	083	A8FF	1093
0615	065	065	125	125	A8FF	12672
0616	050	050	057	057	A8FF	3614
0617	001	001	001	001	GMC	57975*
0618	001	001	001	001	GMC	60201*
0619	075	075	095	095	A8FF	5889
0620	001	001	001	001	GMC	52966*
0621	001	001	001	001	GMC	54202*
0622	001	001	001	001	GMC	52089*
0623	001	001	001	001	GMC	43538
0624	054	054	070	070	A8FF	4169
0625	077	077	105	105	A8FF	495
0626	001	001	001	001	GMC	47397
0627	052	052	120	120	A8FF	10408

FIGURE 3.1-12
BRAKE STATUS REPORT

3.1.7 Maintenance Work Performed Reports

A single report generator program produces up to four reports of work performed, to assist management to monitor maintenance activity. The user selects the types of work for which the S/U System maintains records. Depending on this selection, the reports are produced. They are on-demand reports, generally requested monthly. Each report lists each job, of the type indicated by the report title, performed during the month. The reports are:

(a) Inspection Done

(b) Units Changed

(c) Re-ring/Overhaul Jobs

(d) Brake Jobs Done

Specifications for these reports are described in Tables 3.1-13 through 3.1-16. The reports are illustrated in Figures 3.1-13 through 3.1-16.

TABLE 3.1-13

REPORT SPECIFICATION
INSPECTIONS DONE REPORT

GENERATING PROGRAM: RP058

FREQUENCY: Monthly

REPORT HEADER: INSPECTIONS DONE FOR MO 19YR

ORGANIZATION: A detail report line is printed for each bus on which an inspection was performed during the month. Buses are sequenced in ascending order.

CONTENTS:

COLUMN HEADER	DESCRIPTION
Bus	Bus number
Date	Date of inspection
Insp Done	Inspection schedule and step
Accum Miles	Accumulated miles at inspection
Service Miles	Miles since previous inspection

TABLE 3.1-14

REPORT SPECIFICATION
UNITS CHANGED REPORT

GENERATING PROGRAM: RP058

FREQUENCY: Monthly

REPORT HEADER: 'UNIT NAME' (GR-UN) CHANGED DURING MO 19YR

ORGANIZATION: A detail line is printed for each bus on which the specified unit was changed during the month. Buses are sequenced in ascending order.

CONTENTS:

COLUMN HEADER	DESCRIPTION
Bus	Bus number
Date	Date of transaction
Accum Miles	Accumulated miles at unit change
Service Miles	Miles since previous unit was changed

TABLE 3.1-15

REPORT SPECIFICATION
RERING/OVERHAUL JOBS REPORT

GENERATING PROGRAM: RP058

FREQUENCY: Monthly

REPORT HEADER: RERING/OVERHAUL JOBS FOR MO 19YR

ORGANIZATION: A detail line is printed for each bus on which an engine re-ring or engine overhaul job was performed during the month. Buses are sequenced in ascending order.

CONTENTS:

COLUMN HEADER	DESCRIPTION
Bus	Bus number
Type	Type, either re-ring or overhaul
Date	Date of transaction
Accum Miles	Accumulated miles at transaction
Service Miles	Miles since previous re-ring or overhaul

TABLE 3.1-16

REPORT SPECIFICATION
BRAKE JOB DONE REPORT

GENERATING PROGRAM: RP058

FREQUENCY: Monthly

REPORT HEADER: BRAKE JOB DONE FOR MO 19YR

ORGANIZATION: A detail line is printed for each bus on which a brake job was done during the month. Buses are sequenced in ascending order.

CONTENTS:

COLUMN HEADER	DESCRIPTION
Bus	Bus number
Date	Transaction date
Type	Type of brake job (either 'ALL' or for partial job wheels indicated)
Lining Code	Code for lining used
Accum Miles	Accumulated miles at service
Service Miles	Miles since previous brake job

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INSPECTIONS DONE FOR AUG. 1973

BUS	DATE	INSP DONE	ACCUM MILES	SERVICE MILES
0100	08/23/73	00-00	0	0
0101	08/23/73	00-00	0	0
0102	08/23/73	00-00	0	0
0104	08/23/73	00-00	0	0
0105	08/23/73	00-00	0	0
0106	08/23/73	00-00	0	0
0107	08/23/73	00-00	0	0
0108	08/23/73	00-00	0	0
0109	08/23/73	00-00	0	0
0 SCHED. 00 INSPECTIONS, AVE. SERVICE MILES =				0.0
0100	08/26/73	01-01	656,068	656,068
0105	08/26/73	01-01	770,471	770,471
0106	08/26/73	01-01	809,181	809,181
0108	08/26/73	01-01	867,197	867,197
4 SCHED. 01 INSPECTIONS, AVE. SERVICE MILES =				775,729.3
0101	08/26/73	02-01	638,583	638,583
0107	08/26/73	02-01	833,860	833,860
0109	08/26/73	02-01	807,146	807,146
3 SCHED. 02 INSPECTIONS, AVE. SERVICE MILES =				759,863.0
0104	08/26/73	04-01	794,246	794,246
1 SCHED. 04 INSPECTIONS, AVE. SERVICE MILES =				794,246.0

FIGURE 3.1-13
INSPECTIONS DONE REPORT

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BRAKE RELAY VALVE (30-06) CHANGED DURING AUG. 1973

BUS	DATE	ACCUM MILES	SERVICE MILES
0640	08/26/73	192,810	192,356
0654	08/26/73	181,101	180,966
0912	08/26/73	95,659	94,853
0931	08/26/73	40,230	39,925

TOTAL BRAKE RELAY VALVE (30-06) CHANGED = 4, SERVICE MILE AVE = 127,025.0

FIGURE 3.1-14
UNITS CHANGED REPORT

AC TRANSIT

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RERING/OVERHAUL JOBS FOR AUG. 1973

BUS	TYPE	DATE	ACCUM MILES	SERVICE MILES
0936	RR	08/26/73	36,306	35,900
0936	OH	08/26/73	36,306	35,900
0941	RR	08/26/73	34,061	33,705
0941	OH	08/26/73	34,061	33,705
0964	RR	08/26/73	46,670	0
0964	RR	08/26/73	46,670	46,404
0969	RR	08/26/73	38,550	38,098
1854	RR	08/26/73	815,135	114,781

FIGURE 3.1-15
RERING/OVERHAUL JOBS REPORT

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BRAKE JOBS DONE FOR AUG. 1973

BUS	DATE	TYPE	LINING CODE	ACCUM MILES	SERVICE MILES
0110	08/24/73	ALL	A8FF	364,699	0
0124	08/24/73	ALL	A8FF	308,296	0
0125	08/24/73	ALL	A8FF	283,884	0
0560	08/24/73	ALL	A8FF	289,456	0
0642	08/24/73	ALL	A8FF	172,525	0
0809	08/24/73	ALL	A8FF	174,528	0
0927	08/24/73	ALL	A8FF	143,499	0
1861	08/24/73	ALL	A8FF	103,191	0
2100	08/24/73	ALL	A8FF	148,185	0

FIGURE 3.1-16
BRAKE JOB DONE REPORT

3.1.8 Unit Change Status Report

The Unit Change Status report is designed to enable management to monitor the status of major units on each vehicle and to schedule maintenance of these units.

The report contains a separate section for each division. Within the division section, information is displayed for each vehicle assigned to that division. In each section, report lines are organized by vehicle number in ascending order.

The information displayed for each vehicle consists of the vehicle number, the accumulated mileage traveled by the vehicle and the mileage traveled since each of several specified units were changed. The units and their identifying codes are specified in the report generator program; they are not user-specified. The report was designed specifically for ACTD.

The report described above is generated by the Unit Change Status report generator program, RP059A. A second version of the program, RP059B, generates a report that also displays a two-character indicator of the month during which the unit change was performed in addition to the mileage traveled since the change. This indicator consists of a letter (A thru M, excluding I) that represents the month during the year when the unit change was performed, and of the last digit of that year.

Specifications for the report are described in Table 3.1-17. The report is illustrated in Figure 3.1-17.

TABLE 3.1-17

REPORT SPECIFICATION
UNIT CHANGE STATUS REPORT

GENERATING PROGRAM: RP059

FREQUENCY: Monthly

REPORT HEADER: UNIT CHANGE STATUS AS OF MO/DA/YR
MILES SINCE LAST CHANGE IN THOUSANDS

ORGANIZATION: The report contains a section for each division within the property. Within each division, detail report lines are organized by bus number in ascending order.

CONTENTS:

COLUMN HEADER	DESCRIPTION
Bus No.	Bus Number
Accum Miles	Accumulated miles
Diff 0201	Miles in thousands since differential was last changed
Brake Linings Front 0401	Miles in thousands since front brake linings were last changed
Brake Linings Rear 0402	Miles in thousands since rear brake linings were last changed
Clutch 0501	Miles in thousands since clutch was last changed
Starter 0701	Miles in thousands since starter was last changed
Gen 0702	Miles in thousands since generator was last changed
Blower 0801	Miles in thousands since blower was last changed
Overhaul Semi 0898	Miles in thousands since engine was given a re-ring (semi-overhaul)
Overhaul Major 0899	Miles in thousands since engine was given a major overhaul
Trans 1701	Miles in thousands since transmission was last changed
Air Comp 3001	Miles in thousands since air compressor was last changed
Brake Diaphragm Front 3002	Miles in thousands since front brake diaphragm was last changed
Brake Diaphragm Rear DD-3 3003	Miles in thousands since rear brake diaphragm DD3 was last changed

TABLE 3.1-17 (Concluded)

Brake Diaphragm Rear DBLE 3004	Miles in thousands since rear brake diaphragm double was last changed
Brake Appl Valve 3005	Miles in thousands since brake applicator valve was last changed
Brake Relay Valve 3006	Miles in thousands since brake relay valve was last changed

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DIVISION D2 — UNIT CHANGE STATUS AS OF D3/31/74 — MILES SINCE LAST CHANGE IN THOUSANDS — PAGE 1 — D5/21/74

BUS NO.	ACCUM MILES	DIFF	** BRAKE ** LININGS FRONT	** BRAKE ** LININGS REAR	CLUTCH	START	GEN	BLOWER	**OVERHAUL** SEMI	**OVERHAUL** MAJOR	TRANS	AIR COMP	*BRAKE DIAPHRAGM* FRONT	*BRAKE DIAPHRAGM* REAR DD-3	*BRAKE DIAPHRAGM* REAR D8LE	BRAKE APPL VALVE	BRAKE RELAY VALVE
		D201	D4D1	D402	D5D1	D7D1	D702	D8D1	0898	D899	17D1	3DD1	3DD2	3DD3	3DD4	30D5	3DD6
100	669,488	145-D3	1D2-D3	34-D3	12-J3	30-D3	9-K3	94-D3	9-L3	9-L3	2D9-L3	32-D3	47-D3	9D-D3	D-	37-D3	32-D3
101	652,386	247-D3	22-D3	22-D3	21-D3	21-D3	21-D3	38-D3	6-A1	6-A1	21-D3	187-D3	28-D3	28-D3	O-	107-D3	76-D3
102	677,079	142-D3	5D-D3	26-D3	122-D3	69-D3	69-D3	22-D3	192-D3	D-	254-D3	75-D3	26-D3	3D-D3	D-	30-D3	138-D3
103	776,782	149-D3	24-G3	56-D3	87-D3	25-D3	1D7-D3	192-D3	34-D3	D-	1D7-D3	1D7-D3	12-L3	99-D3	D-	20-H3	2D-H3
104	818,476	159-G3	191-D3	47-D3	48-G3	77-G3	1D5-G3	157-G3	179-G3	D-	48-G3	56-G3	36-D3	36-D3	D-	1D5-D3	1D5-D3
105	793,585	21D-D3	9-M3	45-D3	5-A4	9-M3	55-D3	79-D3	276-D3	O-	5-A4	2D-H3	36-D3	36-D3	D-	232-D3	232-D3
106	832,3DD	83-D3	35-D3	48-D3	137-D3	33-D3	17-K3	112-D3	94-D3	D-	175-D3	186-D3	52-D3	43-D3	D-	64-D3	64-D3
107	852,D63	138-G3	183-D3	12-L3	43-D3	45-D3	45-D3	45-D3	45-D3	45-D3	54-D3	45-D3	51-D3	16-K3	D-	134-D3	228-D3
108	892,946	2-C4	54-D3	1D-M3	1D3-D3	88-D3	81-D3	19-K3	1D5-D3	293-D3	12D-D3	19-K3	79-D3	13-L3	D-	266-D3	266-D3
109	830,619	196-D3	8-M3	12-L3	79-D3	16-K3	1DD-D3	22-H3	12D-D3	12D-D3	2D2-D3	120-D3	46-D3	D-	D-	13-K3	14D-D3
110	853,263	134-D3	11-M3	23-H3	43-D3	842-G3	93-D3	61-D3	159-D3	D-	1D4-D3	219-D3	44-D3	44-D3	D-	209-D3	97-D3
111	84D,D55	264-D3	2-C4	38-D3	191-D3	22-K3	45-D3	87-D3	5D-D3	D-	191-D3	210-D3	50-D3	5D-D3	D-	43-D3	27-H3
112	661,57D	25D-D3	145-D3	25-D3	58-D3	29-D3	46-D3	14D-D3	1D9-D3	D-	13D-D3	24D-D3	32-D3	38-D3	O-	165-D3	165-D3
113	758,8D8	2D6-D3	61-D3	13-A4	116-D3	88-D3	232-D3	31-J3	3D2-D3	D-	116-D3	102-D3	23-L3	9D-D3	D-	27-K3	61-D3
114	7D3,793	131-D3	94-D3	33-K3	12D-D3	77-D3	100-D3	182-D3	136-D3	D-	12D-D3	2D4-D3	61-D3	680-E3	D-	45-H3	165-D3
115	698,703	12D-D3	67-D3	D-	36-D3	1D6-D3	19D-D3	36-D3	255-D3	D-	36-D3	141-D3	19-L3	19-L3	D-	99-D3	154-D3
116	716,662	43-H3	92-D3	12-A4	66-D3	19-M3	12D-D3	146-D3	146-D3	D-	66-D3	232-D3	58-D3	27-K3	O-	166-D3	74-D3
117	712,922	151-D3	22D-D3	72-D3	112-D3	75-D3	72-D3	53-H3	53-H3	D-	112-D3	186-D3	80-D3	72-D3	O-	72-D3	75-D3
118	687,969	126-D3	117-D3	75-D3	11-A4	23-L3	232-D3	234-D3	77-D3	D-	11-A4	37-H3	61-D3	20-L3	D-	191-D3	146-D3
119	651,387	74-D3	67-D3	18-L3	123-D3	1D-A4	160-D3	232-D3	16D-D3	D-	158-D3	2D3-D3	52-D3	74-D3	D-	32-J3	122-D3
120	714,956	253-D3	62-D3	29-J3	11-A4	51-D3	237-D3	51-D3	52-D3	D-	11-A4	151-D3	62-D3	21-L3	O-	228-D3	228-D3
121	705,298	1D2-D3	67-D3	73-D3	71-D3	91-D3	145-D3	262-D3	2D5-D3	D-	128-D3	221-D3	61-D3	61-D3	D-	6-B4	228-D3
122	694,529	6-B4	86-D3	16-M3	141-D3	59-D3	216-D3	293-D3	189-D3	D-	172-D3	32-H3	16-M3	6-B4	D-	25D-D3	25D-D3
175	356,546	5D-D3	127-D3	26-D3	4-A4	99-D3	34-D3	60-D3	198-D3	D-	98-D3	198-D3	49-D3	49-D3	D-	1D4-D3	1D4-D3
176	349,772	41-D3	85-D3	63-D3	3D-D3	54-D3	141-D3	141-D3	2D2-D3	D-	349-D3	141-D3	92-D3	97-D3	D-	97-D3	97-D3
300	538,088	538-D3	22-L3	18-M3	138-D3	1D4-D3	1D3-D3	51-D3	321-D3	D-	224-D3	143-D3	50-D3	26-K3	D-	12-A4	35-H3
301	513,649	513-D3	42-D3	8-A4	78-D3	86-D3	141-D3	2D1-D3	112-D3	D-	78-D3	241-D3	53-D3	66-D3	D-	154-D3	15-K3
302	527,942	528-D3	51-D3	65-D3	1DD-D3	88-D3	193-D3	1D4-D3	88-D3	D-	211-D3	93-D3	21-K3	47-D3	D-	31-H3	242-D3
303	532,198	522-D3	13-M3	16-L3	41-D3	55-D3	129-D3	229-D3	323-D3	D-	41-D3	5D-D3	13-M3	13-M3	D-	132-D3	52-D3
304	526,086	273-D3	32-H3	D-	136-D3	91-D3	47-D3	9-A4	3D9-D3	D-	329-D3	7D-D3	65-D3	65-D3	D-	65-D3	65-D3
305	513,443	513-D3	26-J3	14-M3	41-D3	68-D3	2D1-D3	292-D3	286-D3	O-	41-D3	39-D3	1D-A4	26-J3	D-	26-J3	26-J3
306	514,251	514-D3	9-A4	33-G3	42-D3	78-D3	142-D3	9D-D3	29D-D3	D-	64-D3	138-D3	57-D3	73-D3	D-	1D-A4	1D7-D3
307	537,422	537-D3	1D-A4	1D-A4	117-D3	41-D3	121-D3	16-L3	94-D3	D-	127-D3	65-D3	118-D3	56-D3	D-	37-D3	72-D3
308	523,729	524-D3	10-L3	23-H3	79-D3	3D-D3	125-D3	3-B4	3-B4	D-	258-D3	122-D3	75-D3	1D-L3	O-	117-D3	132-D3
309	541,451	541-D3	45-D3	8-A4	67-D3	1DD-D3	94-D3	245-D3	221-D3	O-	67-D3	42-D3	38-D3	1DD-D3	D-	26-G3	32-D3
310	515,875	439-D3	107-D3	16-L3	115-D3	28-H3	4D-D3	14D-D3	291-D3	D-	115-D3	72-D3	44-D3	52-D3	D-	44-D3	215-D3
311	499,069	499-D3	77-D3	14-M3	95-D3	494-H3	2-C4	85-D3	252-D3	252-D3	95-D3	27-J3	82-D3	82-D3	D-	32-G3	167-D3
312	520,683	52D-D3	55-D3	14-M3	126-D3	68-D3	131-D3	257-D3	256-D3	D-	151-D3	14-M3	55-D3	22-K3	D-	98-D3	231-D3
313	509,478	158-D3	26-H3	6-B4	21-K3	83-D3	2D1-D3	207-D3	82-D3	D-	21-K3	38-D3	38-D3	53-D3	D-	45-D3	6-B4
314	525,695	526-D3	39-D3	22-J3	65-D3	79-D3	236-D3	72-D3	11D-D3	O-	65-D3	77-D3	63-D3	63-D3	D-	4-B4	4-B4

FIGURE 3.1-17
UNIT CHANGE STATUS REPORT

3.1.9 Coach History By Unit Report

The Coach History By Unit report is an on-demand report. It is designed to provide management with the capability to review the maintenance history of individual coaches. This history consists of the vehicle inspections and unit changes performed. Unit changes are defined to include engine re-rings, engine overhauls, and brake reline jobs.

The report displays information specified by the user when the report is requested. The format of the request is described in Section 4.3, Request Cards. The number of request cards used to specify the request is unlimited. Through these cards the user may specify the coaches for which the report is to be generated and the types of maintenance jobs to be displayed. Coach options are:

(a) One or more individual coaches.

(b) One or more series of coaches.

(c) All coaches.

Within the latter two options, the user may limit the request to coaches assigned to one or more divisions up to a maximum of 20 divisions. Maintenance job options are:

(a) Vehicle inspections only.

(b) Unit changes only.

(c) Vehicle inspections and unit changes.

The report contains a separate section for each coach specified in the request. Inspections, if requested, are displayed first and then unit change jobs, by group-unit code in ascending order. Within each class of job, the information is displayed in chronological order.

The detail displayed on each line consists of the identification of the job performed, the date of the job, the accumulated miles traveled by the coach at that time and the mileage traveled since the last job of the same nature.

Table 3.1-18 describes the report specifications. The report is illustrated in Figure 3.1-18.

TABLE 3.1-18

REPORT SPECIFICATION
COACH HISTORY BY UNIT

GENERATING PROGRAM: RP064

FREQUENCY: On-demand

REPORT HEADER: DIVISION XX COACH HISTORY BY UNIT
AS OF MO/DA/YR

BUS NO 9999

ORGANIZATION: The report contains a separate section for each coach specified by the user in the report request. Inspection and/or unit change records, as specified by the user, are listed. Inspections, if specified, are listed first in ascending date order. Unit changes, including engine re-rings, engine overhauls, and brake jobs, are listed in ascending order by:

Group-unit code
Job date

CONTENTS:

COLUMN HEADER	DESCRIPTION
Unit No.	Group-unit code or inspection schedule-step code
Name	Unit name or inspection type
Job Date	Date job performed
Accum Miles	Accumulated coach miles as of job date
Service Miles	Miles since previous unit change of same type or prior inspection performed

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BUS NO 0121

UNIT NO.	UNIT NAME	JOB DATE	R	ACCUM MILES	SERVICE MILES
02-01	DIFFERENTIAL	04/02/73	3	602,960	602,960
04-01	BRAKE LINING-FRONT	04/02/73	3	637,960	637,960
04-02	BRAKE LINING-REAR	04/02/73	3	631,960	631,960
05-01	CLUTCH	04/02/73	3	633,960	633,960
07-01	STARTER	04/02/73	3	613,960	613,960
07-02	GENERATOR	04/02/73	3	559,960	559,960
08-01	BLOWER	04/02/73	3	442,960	442,960
17-01	TRANSMISSION	04/02/73	3	576,960	576,960
30-01	AIR COMPRESSOR	04/02/73	3	483,960	483,960
30-02	FRONT BRAKE DIAPHRAGM	04/02/73	3	643,960	643,960
30-03	REAR BRAKE DIAPHRAGM, OD-3	04/02/73	3	643,960	643,960
30-05	BRAKE APPLICATOR VALVE	04/02/73	3	455,960	455,960
30-05	BRAKE APPLICATOR VALVE	02/11/74	3	699,016	243,056
30-06	BRAKE RELAY VALVE	04/02/73	3	476,960	476,960
08-98	SEMI-OVERHAUL	04/02/73	3	499,960	499,960

FIGURE 3.1-18
COACH HISTORY BY UNIT

3.1.10 Inspection Planning Report

The Inspection Planning Report is designed to provide management with information that will assist in the scheduling and control of coach inspections. Management will normally request the report weekly, at the beginning of the week. Generation of the report on this basis will allow management time for the scheduling of inspections to be performed the following week.

The report contains a separate section for each division. Within a report section, information for each active coach due for inspection in the next 14 days is displayed. The information consists of the estimated number of days before the next inspection is due, the schedule-step code, type of inspection due, the miles traveled by the coach since the last inspection, and the estimated number of miles since inspection that the coach will have traveled in another 14 days if no action is taken.

Each report section is organized by the estimated number of days, in ascending order, before the next inspection is due. This is designed to draw management's attention to those coaches, and the number of coaches, that should be scheduled for inspection during the next one to two weeks.

The estimates are based on the number of miles traveled by the coach in the preceding 14 days. Therefore, if the coach has not been operated during that period, the estimate cannot be calculated and the coach does not appear on the report unless it was overdue for inspection.

Table 3.1-19 describes the report specifications. Figure 3.1-19 illustrates the report.

TABLE 3.1-19

REPORT SPECIFICATION
INSPECTION PLANNING REPORT

GENERATING PROGRAM: RP066

FREQUENCY: Weekly

REPORT HEADER: INSPECTION PLANNING REPORT
AS OF MO/DA/YR

ORGANIZATION: The report contains a section for each division. Within each division section, detail report lines for individual coaches are organized by the estimated number of days, in ascending order, before the next inspection is due.

CONTENTS:

COLUMN HEADER	DESCRIPTION
Bus	Coach number
Days to Go	Estimated number of days before the next inspection due
Inspection Due	
Type	Type of inspection due
Sch-Step	Schedule-step code of inspection due
Miles Since	Miles traveled by the coach since the last inspection as of the report date
Predicted Miles Since	Estimated miles traveled by the coach since the last inspection as of 14 days after the report date

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INSPECTION PLANNING REPORT
AS OF 01/31/73

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DIVISION 01

BUS	DAYS TO GO	*-----INSPECTION DUE------* TYPE	SCH-STEP	01/31 MILES SINCE	02/14 PREDICTED MILES SINCE
641	2	36K	01-06	5,638	8,059
280	3	09K	02-01	8,639	10,489
285	3	06K	01-03	5,698	7,163
483	3	36K	01-06	5,797	6,790
638	3	06K	01-07	5,493	8,278
265	4	72K	01-12	5,600	7,073
279	4	06K	01-03	5,505	7,366
345	4	06K	01-09	5,740	6,650
368	4	12K	01-08	5,556	7,120
490	4	06K	01-01	5,717	6,777
616	4	36K	01-06	5,416	7,623
621	4	36K	01-06	5,620	7,010
442	5	12K	01-02	5,305	7,108
454	5	06K	01-01	5,706	6,611
461	5	12K	01-02	5,630	6,655
262	6	06K	01-03	4,847	7,411
117	7	24K	01-04	5,589	6,476
357	7	24K	01-10	5,580	6,435
385	7	09K	02-07	7,996	9,947
639	7	36K	01-06	4,981	7,154
640	7	36K	01-06	4,914	6,974
643	7	36K	01-06	4,741	7,331
398	8	06K	01-09	5,383	6,442
632	8	36K	01-06	4,995	6,657
110	10	06K	01-03	5,203	6,306
261	10	06K	01-01	4,400	6,635
270	10	06K	01-03	4,788	6,486
377	10	12K	01-08	5,312	6,235
620	10	36K	01-06	4,358	6,757
636	10	36K	01-06	4,607	6,626
474	11	12K	01-02	4,944	6,317
069	12	12K	01-02	5,394	6,108
468	12	12K	01-02	4,819	6,184
469	12	06K	01-03	5,071	6,191
618	12	36K	01-06	3,838	6,365
629	12	12K	01-08	3,818	6,401
084	13	24K	01-04	5,107	6,052
295	13	06K	01-01	4,357	6,114
486	13	09K	02-05	7,370	9,134
647	13	36K	01-06	4,238	6,208

FIGURE 3.1-19
INSPECTION PLANNING REPORT

3.1.11 Tire Mileage Report

The Tire Mileage report was designed specifically to meet the output requirements of DTS. It displays daily mileages during a month for each vehicle in the system.

The report is produced through the execution of a stand-alone computer job, requested by the user.

The report specifications are described in Table 3.1-20. The report is illustrated in Figure 3.1-20.

TABLE 3.1-20

REPORT SPECIFICATION
TIRE MILEAGE REPORT

GENERATING PROGRAM: PRTMIL

FREQUENCY: Monthly

REPORT HEADER: TIRE MILEAGE FOR MONTH OF MON 19YR

ORGANIZATION: One detail line for each day a bus was operated. Sequenced by bus number and date.

CONTENTS:

COLUMN HEADER	DESCRIPTION
Bus	Bus number
Date	Date of mileage
Miles	Mileage for date

TIRE MILEAGE
FOR MONTH OF APR 1973

BUS	DATE	MILES
1815	04/27/73	45
	TOTAL	473
1819	04/05/73	22
1819	04/06/73	65
1819	04/10/73	27
1819	04/12/73	94
1819	04/13/73	7
1819	04/25/73	26
	TOTAL	241
1842	04/11/73	105
1842	04/12/73	103
1842	04/13/73	130
1842	04/16/73	79
1842	04/17/73	81
1842	04/23/73	52
1842	04/24/73	72
1842	04/25/73	103
1842	04/26/73	105
1842	04/27/73	86
1842	04/30/73	107
	TOTAL	1,023
	MONTHLY TOTAL MILES	3,048

FIGURE 3.1-20
TIRE MILEAGE REPORT

3.2 Edit Reports

The Edit reports are produced by the system to enable the user to monitor system input and to correct input that have failed the S/U system data acceptance criteria. These reports are listed in Table 3.2-0, and a description of each is provided.

TABLE 3.2-0

EDIT REPORTS

SUBSECTION NUMBER	FREQUENCY	REPORT TITLE	GENERATED BY
3.2.1	Daily	Rejected Service Data Collector Records	DTTAPE, ACTAPE
3.2.2	Daily	Service Data Collector Record Summary	DTTAPE, ACTAPE
3.2.3	Daily	Unresolved Codes and Edit List	DA600
3.2.4	Daily	Constants File Update	DA600
3.2.5	Daily	Summary of Service System Transactions	DA600
3.2.6	Daily	Service Transaction Edit List	DG700

3.2.1 Rejected Service Data Collector Records

The SIMS S/U System, as installed at ACTD and DTS, reads a tape file of records from service data collectors. These records supply the servicing information to the system. Any record that does not conform to the data collector record format is rejected. The rejected records are displayed on this report.

The format of the listing is different for each site. A report specification for the DTS version is given in Table 3.2-1, and a sample report is given in Figure 3.2-1. The ACTD report is specified in Table 3.2-2, and a sample report is given in Figure 3.2-2.

TABLE 3.2-1

REPORT SPECIFICATION
REJECTED SERVICE DATA COLLECTOR RECORDS - DTS

GENERATING PROGRAM: DTTAPE

FREQUENCY: Daily

REPORT HEADER: REJECTED SERVICE DATA COLLECTOR RECORDS
FOR PROCESSING DATE MM/DD/YY

ORGANIZATION: Report lines are ordered in the sequence that the data collector records were read by DTTAPE. One line is printed per rejected record.

CONTENTS:

COLUMN HEADER	DESCRIPTION
Error Message	Reason for rejection of the record is given
Data Record	Contents of the record is printed
Date	Date of the data collector record is printed

TABLE 3.2-2

REPORT SPECIFICATION
REJECTED SERVICE DATA COLLECTOR RECORDS - ACTD

GENERATING PROGRAM: ACTAPE

FREQUENCY: Daily

REPORT HEADER: REJECTED SERVICE DATA COLLECTOR RECORDS FOR PROCESSING DATE MM/DD/YY

ORGANIZATION: Report lines are ordered in the sequence that the data collector records were read by ACTAPE.

CONTENTS:

Two lines are printed for each rejected transaction. The first lists the contents of the transaction; the second contains an asterisk under each field in error.

DALLAS TRANSIT
REJECTED SERVICE DATA COLLECTOR RECORDS
FOR PROCESSING DATE 10/09/73

10/09/73

PAGE 1

ERROR MESSAGE	DATA RECORD		DATE
MISSING EOM 'Z'	A1 334	0455000$1023800000000000300026530	042773
MISSING EOM 'Z'	A1 505	0205000$1022300000000000000024500	042773
MISSING EOM 'Z'	A1 027	0255000$1040900000000000000026500	042773
MISSING EOM 'Z'	A1 204	0495000$1031600000000000300033500	042773
MISSING EOM 'Z'	A1 430	0245000$1030700000000000300045500	042773

FIGURE 3.2-1
REJECTED SERVICE DATA COLLECTOR RECORDS (DTS)

END-OF-DIAGNOSTIC-REPORT

```
SERVICE RECORD-  2940837410104000805----------0081#0000----------0Z.----------
                                                                  *
SERVICE RECORD-  2940837410104000805----------0081#0000----------0Z.----------
                                                                  *
SERVICE RECORD-  2940845410104000592----------0117#0000----------0Z.----------
                                                                  *
SERVICE RECORD-  2940845410104000592----------0117#0000----------0Z.----------
                                                                  *
SERVICE RECORD-  2940845410104000592----------0117#0000----------0Z.----------
                                                                  *
SERVICE RECORD-  2940846410104000592----------0117#0000----------0Z.----------
                                                                  *
SERVICE RECORD-  2940846410104000592----------0117#0000----------0Z.----------
                                                                  *
SERVICE RECORD-  2940846410104000592----------0117#000-----------0Z.----------
                                                                  *
SERVICE RECORD-  2940940410104000592----------0117#000-----------0Z.----------
                                                                  *
SERVICE RECORD-  2940940410104000592----------0117#000-----------0Z.----------
                                                                  *
SERVICE RECORD-  2940940410104000592----------0117#000-----------0Z.----------
                                                                  *
SERVICE RECORD-  2940940410104000592----------0117#000-----------0Z.----------
                                                                  *
SERVICE RECORD-  2940940410104000592----------0117#000-----------0Z.----------
                                                                  *
SERVICE RECORD-  2940940410104000592----------0117#000-----------0Z.----------
                                                                  *
SERVICE RECORD-  2940941410104000592----------0117#000-----------0Z.----------
                                                                  *
SERVICE RECORD-  2940941410104000592----------0117#000-----------0Z.----------
                                                                  *
```

FIGURE 3.2-2
REJECTED SERVICE DATA COLLECTOR RECORDS (ACTD)

3.2.2 Service Data Collector Summary

This report was designed to report the number of service data collector records input to the system. For each date input, a total of valid and invalid records is printed. This feature was designed to facilitate data collector reliability monitoring.

A report specification is given in Table 3.2-3, and a sample report is given in Figure 3.2-3.

TABLE 3.2-3

REPORT SPECIFICATION
SERVICE DATA COLLECTOR SUMMARY

GENERATING PROGRAM: DTTAPE ACTAPE

FREQUENCY: Daily

REPORT HEADER: SERVICE DATA COLLECTOR RECORD SUMMARY FOR PROCESSING DATE MM/DD/YY

ORGANIZATION: The report is in date order as input to the system

CONTENTS:

COLUMN HEADER	DESCRIPTION
Date	The date on which the data collector records were made
Valid Records	A count of the number of valid records for the date
Invalid Records	A count of erroneous records found for this date

DALLAS TRANSIT
SERVICE DATA COLLECTOR RECORD SUMMARY
FOR PROCESSING DATE 10/09/73

10/09/73

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DATE	VALID RECORDS	INVALID RECORDS
04/27/73	388	5

END-OF-SUMMARY-REPORT

FIGURE 3.2-3
SERVICE DATA COLLECTOR RECORD SUMMARY

3.2.3 Unresolved Codes and Edit List

The SIMS S/U System is designed to accept and process a prescribed set of transactions, each of which has an associated code. This report lists any transaction that has an invalid code.

This edit list also displays transactions that have a non-numeric vehicle number or transaction date.

The last type of transactions displayed are constants file update transactions that have failed the edit criteria.

A report specification is listed in Table 3.2-4 and a sample report is given in Figure 3.2-4.

TABLE 3.2-4

REPORT SPECIFICATION
UNRESOLVED CODES AND EDIT LIST

GENERATING PROGRAM: DA600

FREQUENCY: Daily

REPORT HEADER: UNRESOLVED CODES AND EDIT LIST FOR PROCESSING DATA MM/DD/YY

ORGANIZATION: Report lines are printed in the order that the transactions are submitted.

CONTENTS: Two lines are printed for each transaction rejected. The first contains the transaction name and a listing of the transaction. The second line contains an asterisk under each field in error.

AC TRANSIT
UNRESOLVED CODES AND EDIT LIST
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UNRESOLVED CODE- 0962267309410899
*

UNRESOLVED CODE- 0700267306543006
*

FIGURE 3.2-4
UNRESOLVED CODES AND EDIT LIST

END-OF-EDIT-REPORT

3.2.4 Constants File Updates

Transactions may be input that update the contents of the four S/U System constants files. This report prints the changes that have been made during the run. For each record changed, two lines are printed. The first shows the contents of the record after updating. The second line contains (a) the old file record, or (b) a message to explain the processing.

Table 3.2-5 lists a report specification and Figure 3.2-5 gives a sample report.

TABLE 3.2-5

REPORT SPECIFICATION
CONSTANTS FILE UPDATE REPORT

GENERATING PROGRAM: DA600

FREQUENCY: Daily

REPORT HEADER: CONSTANTS FILE UPDATES FOR PROCESSING
DATE MM/DD/YY

ORGANIZATION: Report linesare printed in sequence by transaction code.

CONTENTS: For each updating operation, two lines are printed. The first shows the constants file record after updating. The second contains either a listing of the old file records or a message explaining the processing done.

AC TRANSIT
CONSTANTS FILE UPDATES
FOR PROCESSING OATE 10/09/73

10/09/73

PAGE 1

INSPECTION SCHEDULE-	C5040003
ADDITION	C5040110
	C5040220
	C5040330
	C5049910

FIGURE 3.2-5
CONSTANTS FILE UPDATES

END-OF-CONSTANTS-UPOATE-REPORT

3.2.5 Summary of Service System Transactions

This report gives a count of the number of each valid transaction type input during this run. This count reflects the number of transactions passed to the Edit/Update program for processing. A count of unresolved transaction codes encountered is also given.

Table 3.2-6 lists the report specification for this report, and Figure 3.2-6 gives a sample report.

TABLE 3.2-6

REPORT SPECIFICATION
SUMMARY OF SERVICE SYSTEM TRANSACTIONS

GENERATING PROGRAM: DA600

FREQUENCY: Daily

REPORT HEADER: SUMMARY OF SERVICE SYSTEM TRANSACTIONS FOR PROCESSING DATE MM/DD/YY

ORGANIZATION: One line is printed for each of the seven valid transaction types, and one line for unresolved codes. A total line is generated at the end.

CONTENTS:

COLUMN HEADER	DESCRIPTION
Format Code	Transaction format code
Record Type	Name of the transaction
Count	A count of the number of transactions input of this type

At the end of the report, a total line is printed aggregating the counts for the various format codes.

AC TRANSIT
SUMMARY OF SERVICE SYSTEM TRANSACTIONS
FOR PROCESSING DATE 10/09/73

FORMAT CODE	RECORD TYPE	COUNT
02	DAILY MILES	0
03	INSPECTIONS	9
13	UNIT CHANGES	11
15	BRAKE RELINES	10
17	SERVICING RECORDS	0
19	VEHICLE ASSIGNMENTS	10
09	VEHICLE DELETIONS	0
	UNRESOLVED CODES	2
	TOTAL	42

END-OF-SUMMARY-REPORT

FIGURE 3,2-6
SUMMARY OF SERVICE SYSTEM TRANSACTIONS

3.2.6 Service Transaction Edit List

The S/U System transactions are required to meet certain data acceptance criteria. These criteria are in the form of edit criteria, checking field contents, or update criteria, checking the data against existing data. Transactions that fail to meet these criteria are rejected and printed on this edit list.

A report specification is listed in Table 3.2-7 and a sample report is given in Figure 3.2-7.

TABLE 3.2-7

REPORT SPECIFICATION
SERVICE TRANSACTION EDIT LIST

GENERATING PROGRAM: DG700

FREQUENCY: Daily

REPORT HEADER: SERVICE TRANSACTION EDIT LIST FOR PROCESSING DATE MM/DD/YY

ORGANIZATION: Report lines are printed in sequence by vehicle number.

CONTENTS:

For each rejected transaction, two lines are printed. The first contains the name of the transaction and a listing of its contents. The second contains an asterisk under each field in error; or a message defining the erroneous operation attempted.

```
BRAKE RELINE-          150824730099329829802020 2ABFF0287713
                       VEHICLE NOT ON FILE

INSPECTION-            0308267301020103
                                      *

VEHICLE ASSIGNMENT-    19082373  01030301
                                      *

UNIT CHANGE-           1308267399410899
                       VEHICLE NOT ON FILE
```

FIGURE 3.2-7
SERVICE TRANSACTION EDIT LIST

END-OF-EDIT-REPORT

3.3 File Listings

Reports have been designed to display to the user the contents of the records in the major system files, other than transaction files. The listings provide the user with a capability to verify that those records are correct and may assist in the analysis of possible data problems.

3.3.1 Vehicle Information Listing

The Vehicle Information Listing is an on-demand report, requested by the user. The listing displays the contents of the Vehicle Master File records. The records are reformatted for the purpose of printing. This facilitates the use and interpretation of the listing.

The user request is specified to the system in the form of options. These options specify the coaches for which the listing is to be generated and the types of records to be displayed. The user may specify:

(a) one or more individual coaches,

(b) one or more series of coaches, or

(c) all coaches.

Within the latter two options, the user may limit the request to coaches assigned to specific divisions.

The user may also specify the types of records to be displayed:

(a) All records,

(b) Daily records,

(c) Monthly records,

(d) Daily and monthly records,

(e) Unit change records, and

(f) Unit change and monthly records.

The Inspection Performed record is displayed under all options.

Table 3.3-1 describes the report specifications. The listing is illustrated in Figure 3.3-1.

TABLE 3.3-1

REPORT SPECIFICATION
VEHICLE INFORMATION LISTING

GENERATING PROGRAM: VEHLST

FREQUENCY: On-demand

REPORT HEADER: BUS = 9999 VEHICLE INFORMATION LISTING

ORGANIZATION: The report contains a separate section for each coach specified by the user. Within each section, records are sequenced in ascending order by:

Vehicle master file record format code
Record date

CONTENTS:

COLUMN HEADER	DESCRIPTION
	Column headings are displayed for daily and monthly records only:
Dailies	
Date	Date of Daily record
Miles	Miles traveled by the coach that day
Fuel	Fuel — quantity dispensed to the coach that day
Oil	Oil — quantity dispensed to the coach that day
Cool	Coolant — quantity dispensed to the coach that day
Term	Identification number of data collector terminal
Torque	Torque fluid dispensed to the coach that day
Monthly	
Date	Date of monthly record
Miles	Miles traveled by the coach that month
Fuel	Fuel — quantity dispensed to the coach that month
Oil	Oil — quantity dispensed to the coach that month
Cool	Coolant — quantity dispensed to the coach that month

TABLE 3.3-1 (Concluded)

COLUMN HEADER	DESCRIPTION
Fuel	Monthly fuel cost
Oil	Monthly oil cost
Cool	Monthly coolant cost

VEHICLE INFORMATION LISTING

BUS=0101 06/03/74

BUS 0101,05/18/72,FT=01,YR=61,SC=00,DIV=02 ON 5/18/72 WAS 00;MILES= 652,386 ON 03/28/74

DAILIES:

DATE	MILES	FUEL	OIL	COOL	TERM TORQUE
03/01/74	74	23.5	1.9		0103-4
03/02/74	105	18.0			0104-0
03/04/74	96	13.7	2.0	2	0100-5
03/05/74	107	18.3			0100-9
03/06/74	128	20.7			0100-0
03/07/74	102	17.2			0103-6
03/08/74	113	20.0			0104-0
03/09/74	47	8.0			0103-1
03/11/74	124	18.9	1.9	1	0103-6
03/12/74	127	18.0			0104-2
03/13/74	62				0000-0
03/14/74	133	20.8		1	0100-4
03/15/74		19.5			0104-0
03/18/74	107				0000-0
03/19/74	95	15.5			0100-9
03/20/74	59	12.8		2	0103-7
03/21/74	103				0000-0
03/22/74	167	25.4	2.0		0103-2
03/24/74		10.3			0103-9
03/24/74	68	.3			0104-1
03/25/74	130	21.8			0104-2
03/26/74		19.9			0100-9
03/27/74	106	15.9		3	0104-0
03/28/74	79	12.8			0103-4

MONTHLY:

DATE	MILES	FUEL	OIL	COOL	$ FUEL	$ OIL	$ COOL
09/73	1,932	288.8	11.9	4	$ 35.230	$ 1.344	$ .192
10/73	3,043	513.7	15.8	9	$ 62.660	$ 1.783	$ .432
11/73	2,659	420.2	7.9	32	$ 51.256	$ .892	$ 1.536
12/73	1,920	289.7	8.0	24	$ 35.335	$ .904	$ .400
01/74	2,077	332.4	2.0	19	$ 40.542	$ .226	$ .019
02/74	1,895	325.6	5.7	26	$ 69.174	$ 2.272	$ .026
03/74	2,132	351.3	7.8	9	$ 115.221	$ 7.566	$ .009

UNITS CHANGED	02-01	ON	04/02/73	FOR 3 AT	404,898	, MILES SINCE= 247,488
UNITS CHANGED	04-C1	ON	04/02/73	FOR 3 AT	629,898	, MILES SINCE= 22,488
UNITS CHANGED	04-02	ON	04/02/73	FOR 3 AT	629,898	, MILES SINCE= 22,488
UNITS CHANGED	05-C1	ON	04/02/73	FOR 3 AT	630,898	, MILES SINCE= 21,488
UNITS CHANGED	07-C1	ON	04/02/73	FOR 3 AT	630,898	, MILES SINCE= 21,488
UNITS CHANGED	07-02	ON	04/02/73	FOR 3 AT	630,898	, MILES SINCE= 21,488
UNITS CHANGED	08-C1	ON	04/02/73	FOR 3 AT	613,898	, MILES SINCE= 38,488
UNITS CHANGED	17-01	ON	04/02/73	FOR 3 AT	630,898	, MILES SINCE= 21,488
UNITS CHANGED	30-01	ON	04/02/73	FOR 3 AT	464,898	, MILES SINCE= 187,488
UNITS CHANGED	30-C2	ON	04/02/73	FOR 3 AT	623,898	, MILES SINCE= 28,488
UNITS CHANGED	30-C3	ON	04/02/73	FOR 3 AT	623,898	, MILES SINCE= 28,488
UNITS CHANGED	30-C5	ON	04/02/73	FOR 3 AT	544,898	, MILES SINCE= 107,488
UNITS CHANGED	30-C6	ON	04/02/73	FOR 3 AT	575,898	, MILES SINCE= 76,488

RERING J08: ON C1/01/71 FOR 3 AT 646,281 ; MILES SINCE 6,105

OVERHAUL J08: ON C1/01/71 FOR 3 AT 646,281 ; MILES SINCE 6,105

FIGURE 3.3-1
VEHICLE INFORMATION LISTING

3.3.2 Constants Files Listings

A single report generator program produces listings of the contents of:

(a) Daily Constants File,

(b) Fleet Constants File,

(c) Unit Name File, and

(d) Unit Threshold File.

A separate listing is generated for each file. The file records are reformatted for the purpose of printing. This facilitates the use and interpretation of the listings.

Tables 3.3-2 through 3.3-5 describe the report specifications. The listings are illustrated in Figures 3.3-2 through 3.3-5.

TABLE 3.3-2

REPORT SPECIFICATION
DAILY CONSTANTS FILE LISTING

GENERATING PROGRAM: RP062

FREQUENCY: On-demand

REPORT HEADER: DAILY CONSTANTS FILE

ORGANIZATION: The contents of the Daily Transaction Limit, Oil Price, and Coolant Price records are displayed on the first line. The Fuel Price records are then displayed in the sequence in which they are stored in the file. The latter part of the listing displays the Inspection Schedule records. The details of an inspection schedule are displayed on one line. The lines are sequenced by schedule code.

CONTENTS:

COLUMN HEADER	DESCRIPTION
	Column headings are displayed for fuel price and inspection schedule records only.
Fuel	
Type	User-specified code representing fuel type
Price	Price per unit of measure expressed in dollars
Inspection Schedules	
Sched	Inspection schedule code
Step/type	Inspection step code and type (this column heading is repeated 20 times)

TABLE 3.3-3

REPORT SPECIFICATION
FLEET CONSTANTS FILE LISTING

GENERATING PROGRAM: RP062

FREQUENCY: On-demand

REPORT HEADER: FLEET CONSTANTS FILE

ORGANIZATION: Detail lines are sequenced by fleet number in ascending order.

CONTENTS:

COLUMN HEADER	DESCRIPTION
Fleet	Fleet number
Fuel Type	User specified code representing fuel type common to all members of fleet
Capacity	
Fuel	Fuel capacity common to all members of the fleet
Oil	Oil capacity common to all members of the fleet
Cool	Coolant capcity common to all members of the fleet
Del Max	
Oil	Maximum normal daily oil consumption
Cool	Maximum normal daily coolant consumption
7-Day Limits	
Min | Fuel	Ranges of normal values of 7-day averages of the consumption of fuel (expressed as miles per gallon), of oil (expressed as miles per quart) and of coolant (in quarts).
Max | Fuel	
Min | Oil	
Max | Oil	
Min | Coolant	
Max | Coolant	

TABLE 3.3-3 (Concluded)

28-Day Limits Min / Max — Fuel Min / Max — Oil Min / Max — Coolant	Ranges of normal values of 28-day averages of the consumption of fuel (expressed as miles per gallon), of oil (expressed as miles per quart) and of coolant (in quarts).
Brake Drum Thickness Front Rear	Brake drum "size" test values.

TABLE 3.3-4

REPORT SPECIFICATION
UNIT NAME FILE LISTING

GENERATING PROGRAM: RP062

FREQUENCY: On-demand

REPORT HEADER: UNIT NAME FILE

ORGANIZATION: Detail lines are sequenced by group-unit code in ascending order.

CONTENTS:

COLUMN HEADER	DESCRIPTION
Unit No.	Group-unit code
Name	Unit name

TABLE 3.3-5

REPORT SPECIFICATION
UNIT THRESHOLD FILE LISTING

GENERATING PROGRAM: RP062

FREQUENCY: On-demand

REPORT HEADER: UNIT THRESHOLD VALUES
(Thousand Miles)
By Fleet

ORGANIZATION: Detail lines are sequenced by group-unit code in ascending order.

CONTENTS:

COLUMN HEADER	DESCRIPTION
Unit No	Group-unit code
	Other column headings are the fleet numbers on file.

AC TRANSIT
DAILY CONSTANTS FILE 06/10/74

NUMBER OF DAYS= RECORDS: 80 MAX DUPLICATE RECORDS: 40 OIL PRICE($ PER QT): $0.970 COOLANT PRICE($ PER QT): $0.001

FUEL

TYPE	PRICE
01	$0.328
02	$0.000
G1	$0.206
04	$0.000
05	$0.000
06	$0.000
07	$0.000
08	$0.000
09	$0.000

INSPECTION SCHEDULES

SCHED /INT	STEP /TYPE	STEP /TYPE	STEP /TYPE	STEP /TYPE	STEP /TYPE	STEP /TYPE	STEP /TYPE	STEP /TYPE	STEP /TYPE	STEP /TYPE	STEP /TYPE	STEP /TYPE	STEP /TYPE	STEP /TYPE	STEP /TYPE	STEP /TYPE	STEP /TYPE	STEP /TYPE	STEP /TYPE	STEP /TYPE
01-06	01	6	02	12																	
02-09	01	9	02	18	03	9	04	36	05	9	06	18	07	9	08	72					
03-08	01	8	02	16	03	8	04	32	05	8											

END-OF-REPORT

FIGURE 3.3-2
DAILY CONSTANTS FILE LISTING

AC TRANSIT
FLEET CONSTANTS FILE

06/03/74

FLEET	FUEL TYPE	CAPACITY FUEL	CAPACITY OIL	CAPACITY COOL	DLY MAX OIL	DLY MAX COOL	7-DAY LIMITS MIN FUEL	7-DAY LIMITS MAX FUEL	7-DAY LIMITS MIN OIL	7-DAY LIMITS MAX OIL	7-DAY LIMITS MIN COOLANT	7-DAY LIMITS MAX COOLANT	28-DAY LIMITS MIN FUEL	28-DAY LIMITS MAX FUEL	28-DAY LIMITS MIN OIL	28-DAY LIMITS MAX OIL	28-DAY LIMITS MIN COOLANT	28-DAY LIMITS MAX COOLANT	BRAKE DRUM THICKNESS FRONT	BRAKE DRUM THICKNESS REAR
		GLNS	QTS	QTS	QTS	QTS	MPG	MPG	MPQ	MPQ	QTS	QTS	MPG	MPG	MPQ	MPQ	QTS	QTS	THOUS	INS
01	01	55	10	15	4	6	2.50	12.50	100	1000	0	20	3.00	10.00	200	900	0	60	375	350
02	01	55	20	25	4	5	3.00	12.00	150	1000	0	15	3.00	12.00	150	1000	0	50	275	275
03	01	55	10	15	4	6	2.50	12.50	100	1000	0	20	3.00	10.00	200	900	0	60	275	275
04	01	55	10	15	4	6	2.50	12.50	100	1000	0	20	3.00	10.00	200	900	0	60	275	275
05	01	50	10	15	4	6	2.50	12.50	100	1000	0	20	3.00	10.00	200	900	0	60	275	275
06	01	55	10	15	4	6	2.50	12.50	100	1000	0	20	3.00	10.00	200	900	0	60	275	275
07	01	55	10	15	4	6	2.50	12.50	100	1000	0	20	3.00	10.00	200	900	0	60	275	275
08	01	55	10	15	4	6	2.50	12.50	100	1000	0	20	3.00	10.00	200	900	0	60	375	375
09	01	55	10	15	4	6	2.50	12.50	100	1000	0	20	3.00	10.00	200	900	0	60	375	375
17	01	55	10	15	4	6	2.50	12.50	100	1000	0	20	3.00	10.00	200	900	0	60	375	375
18	01	55	10	15	4	6	2.50	12.50	100	1000	0	20	3.00	10.00	200	900	0	60	375	375
19	01	55	10	15	4	6	2.50	12.50	100	1000	0	20	3.00	10.00	200	900	0	60	375	375
20	01	55	10	15	4	6	2.50	12.50	100	1000	0	20	3.00	10.00	200	900	0	60	375	375
21	01	55	10	15	4	6	2.50	12.50	100	1000	0	20	3.00	10.00	200	900	0	60	375	375
30	01	55	10	15	4	6	2.50	12.50	100	1000	0	20	3.00	10.00	200	900	0	60	375	375
46	01	55	26	92	4	6	3.00	10.00	99	1100	0	15	3.00	10.00	99	1100	0	60	375	375

END-OF-REPORT

FIGURE 3.3-3
FLEET CONSTANTS FILE LISTING

AC TRANSIT
UNIT NAME FILE 06/03/74
PAGE 1

GROUP UNIT NO	NAME
02-01	DIFFERENTIAL
04-01	BRAKE LINING-FRONT
04-02	BRAKE LINING-REAR
04-99	BRAKE RELINE
05-01	CLUTCH
07-01	STARTER
07-02	GENERATOR
08-01	BLOWER
08-98	SEMI-OVERHAUL
08-99	MAJOR OVERHAUL
17-01	TRANSMISSION
30-01	AIR COMPRESSOR
30-02	FRONT BRAKE DIAPHRAGM
30-03	REAR BRAKE DIAPHRAGM, DD-3
30-04	REAR BRAKE DIAPHRAGM, DOUBLES
30-05	BRAKE APPLICATOR VALVE
30-06	BRAKE RELAY VALVE

FIGURE 3.3-4
UNIT NAME FILE LISTING

AC TRANSIT
UNIT THRESHOLD VALUES
(THOUSAND MILES)
BY FLEET

06/03/74
PAGE 1

UNIT NO 01	02	03	04	05	06	07	08	09	17	18	19	20	21	30	46				
02-01 295		695	295	295	495	345	495	495	200	200	200	200	200	200					
04-01 100		100	100	100	100	100	100	100	100	100	100	100	100	100					
04-02 100		100	100	100	100	100	100	100	100	100	100	100	100	100					
04-99 040	040	050	050	050	050	050													
05-01 200		200	200	200	200	200	200	200	200	200	200	200	200	200					
07-01 105		105	105	105	105	105	105	105	055	055	055	055	055	055					
07-02 245		245	245	245	245	245	245	245	250	250	245	245	245	250					
08-01 295		295	295	295	295	295	295	295	200	200	195	195	195	300					
08-98																			
08-99																			
17-01 200		200	200	200	200	200	200	200	200	200	200	200	200	200					
30-01 245		245	245	245	245	245	245	245	250	250	245	245	245	245					
30-02 100		100	100	100	100	100	100	100	150	150	150	150	150	100					
30-03 100		100	100	100	100	100	075	075	150	150	150	150	100	100					
30-04 100		075	100	100	075	075	075	075	150	150	150	150	100	100					
30-05 250		250	250	250	250	250	250	250	250	250	250	250	250	250					
30-06 250		250	250	250	250	250	250	250	250	250	250	250	250	250					

FIGURE 3.3-5
UNIT THRESHOLD FILE LISTING

END-OF-REPORT

3.4 Error Messages

In addition to the error messages generated by transaction edit procedures (see Section 3.2), there are error messages designed to inform the user of problems during system execution. The messages are printed in lieu of the report generated by the program. The printing of the majority of these messages also indicates that program execution has been terminated. Some errors are serious enough to result in cancellation of the system run.

The S/U System error messages and the programs with which they are associated are listed in Table 3.4-1. Also given is the effect that the error has on the system--i.e., program termination only, system termination, or warning. The messages are listed according to error type. See Section 7.0 for the exact message wording in each program, and a description of the cause of the error.

TABLE 3.4-1

SIMS S/U SYSTEM ERROR MESSAGES

Message Type	Program Identification	Program Section	System Action
Date Signal Record Error	DTTAPE	7.1	S
Maximum Duplicate Record Limit Reached	DG700	7.4	S
Vehicle Master File Out of Sequence	DG700	7.4	S
	RP053	7.7	S
	RP054	7.8	S
	RP056	7.10	S
Vehicle Extract File Out of Sequence	RP051	7.6	S
No Date Record Found in Date File	RP051	7.6	P
	RP053	7.7	P
or	RP054	7.8	P
Date Not Numeric	RP055	7.9	P
	RP056	7.10	P
	RP057	7.11	P
	RP058	7.12	P
	RP059	7.13	P
	RP064	7.15	P
	RP066	7.16	P
Data Error in Daily Constants File	RP054	7.8	N
	RP066	7.16	N
Data Error in Fleet Constants File	RP051	7.6	N
	RP054	7.8	P
No Unit Name on File	RP064	7.15	N
Request Cards Out of Sequence	RP064	7.15	N

Note: The error initiates system action as follows:

S: Execution of the entire job is cancelled.
P: Only program execution is cancelled.
N: No action is taken. The message is a warning.

4.0 SERVICE/UNIT CHANGE SYSTEM INPUTS

The input to the SIMS Service/Unit Change System (S/U System) consists of transaction records, request cards, and JCL cards. The latter two types of input control the execution of the programs; they are described in Sections 4.3 and 4.4.

Transaction records are generally input to the system in the form of 80-character card images. ACTD input is in the form of a card deck; DTS input is on 800 bpi unblocked magnetic tape.

At ACTD and DTS, one type of transaction record, servicing transactions, is entered through automated data collectors. The format and coding of these records are not the same as other transaction records. ACTD data collector records are 80-character BCK records; at DTS, the records are 52-character records in a modified ASCII code, By means of a special-purpose program, data collector records of each property are translated and reformatted to be compatible with the other transaction records. The use of automated data collectors for entry of servicing transactions is not a requirement of the S/U System. Servicing transactions may be prepared manually on a source document, from which the information is key-punched. The 80-character card format that is used is described in Section 4.1.3. The data collector record formats are described separately in Section 4.2.

4.1 Transaction Records

Table 4.1-1 lists the types of transactions and their associated transaction codes, which are input to the S/U System. For reference, the table also indicates the subsection in which each input record format is described. Sections 4.1.1 through 4.1.6 describe the formats of vehicle transaction records. Sections 4.1.7 through 4.1.11 describe the formats of system constants input records.

Sections 4.1.4, 4.1.5, and 4.1.6 describe the input records of maintenance jobs performed--i.e., inspections, unit changes (including engine re-rings and engine overhauls), and brake relines. Normally, these records are used to describe maintenance events that occur day by day. The description identifies the date and type of job performed and the vehicle upon which it was performed. These same types of records are also used to:

(a) enter initial data base information,

(b) record events for which accumulated vehicle mileage cannot be computed automatically,

(c) correct transactions erroneously entered, and

(d) delete file records.

The procedures executed depend on the value of a Correction Modifier Code (CMC) and, for the above purposes except record deletion, the presence of an accumulated vehicle mileage value in the input record. CMC values and the actions triggered thereby are described in Table 4.1-2. In each case, a date requirement is specified. Date

TABLE 4.1-1

REFERENCE LIST OF
INPUT FORMATS AND TRANSACTION CODES

Sec. No.	Input Format	Transaction Code
4.1.1	Vehicle assignment record	19,D9
4.1.2	Daily miles record	Ø2
4.1.3	Vehicle servicing performed record	17
4.1.4	Vehicle inspection performed record	Ø3
4.1.5	Unit change performed record	13
4.1.6	Brake reline performed record	15
4.1.7	Service system constants record	C1
4.1.8	Inspection schedule definition record	C5,D5
4.1.9	Fleet constants and limits record	F1
4.1.10	Vehicle group-unit description record	U1
4.1.11	Unit threshold value record	T1,DT

TABLE 4.1-2

CORRECTION TO AND DELETION OF
MAINTENANCE JOB RECORDS

CMC Value	Accumulated Vehicle Miles (a)	Actions Triggered		Date Limit (b)
		Vehicle Master File	Transaction Master File	
Ø	Yes	Create file record	First transaction	N
Ø	Yes	Record late transaction	Add transaction	J
R(c)	Yes	Restore values on file prior to erroneous transaction	Purge erroneous transaction	J
D(d)	Yes	Replace incorrect data values	Purge erroneous record and add correct transaction	J
X	No	Delete record	Purge equivalent record	C
Y	No	Delete record	Add record containing accumulated vehicle mileage as of date of vehicle master file record deletion	C

Note: (a) Accumulated miles value is accumulated mileage on the vehicle at the time of the maintenance event.

(b) See text for definitions.

(c) Used when maintenance event ascribed to wrong vehicle. Correct record of event must also be entered.

(d) Used to correct transaction date or other data value when transaction correctly identified by vehicle number.

requirements may be:

(a) N: No date limit.

(b) J: Job date must not be more than six months prior to current date.

(c) C: Current date.

The use of the Correction Modifier Code and related input requirements are described in detail in:

Input Preparation Guide: SIMS Service/Unit Change System (MTR-6408)

4.1.1 Vehicle Assignment Record (19, D9)

The Vehicle Assignment Record is the first vehicle transaction record entered in the system. The entry of the initial record for the vehicle causes the necessary minimum number of records to be created in the Vehicle Master File.

The Vehicle Assignment Record normally contains the transaction code 19. It is used to enter:

(a) The basic identity of the vehicle--i.e., vehicle number, model year, and fleet identification.

(b) The accumulated miles traveled by the vehicle as of the effective date of the initial vehicle information entered. This provides a baseline mileage value.

(c) The type of transit service and the operating division to which the vehicle is assigned.

(d) The identity of the inspection schedule for the vehicle and of the next step in that schedule to be performed.

(e) A change in vehicle assignment or inspection schedule.

This record is also used to delete all records for a vehicle from the Vehicle Master File. Input values consist of the transaction code D9, the effective date, and the vehicle number.

Figure 4.1-1 describes the format of the Vehicle Assignment Record. This record consists of the following data items:

Character Position	Data Item	COBOL Field Name
1-2	Transaction code (19,D9)	WS-SRV-CODE
3-4	Month (SIMS date)	WS-SRV-MO
5-6	Day (SIMS date)	WS-SRV-DAY
7-8	Year (SIMS date)	WS-SRV-YR
9-10	Model Year	WS-SRV-MODEL-YR
11-14	Vehicle number	WS-SRV-VEH-NBR
15-16	Schedule (Inspection assignment)	WS-SRV-ASG-SCH
17-18	Step (Inspection assignment)	WS-SRV-ASG-STEP
19-20	Fleet assignment	WS-SRV-FLT-ASG
21-22	Division assignment	WS-SRV-DIV-ASG
23-24	Service assignment	WS-SRV-A-SERV-ASG
25-31	Accumulated miles at SIMS date	WS-SRV-A-ACCUM-MILES
32-80	Filler	FILLER

X	2	Transaction Code = 19, D9	
9	6	Date	M M D D Y Y
9		SIMS	
9	2	Model Year	
9	4	Vehicle Number	
9	4	Inspection Assignment	Step Schedule
9	2	Fleet Assignment	
X	2	Division Assignment	
X	2	Service Assignment	
9	7	Accumulated Miles	
X	49	Filler	

FIGURE 4,1-1
INPUT RECORD FORMAT: VEHICLE ASSIGNMENT

4.1.2 Daily Miles Record (Ø2)

For each day of operation, the miles traveled by each vehicle operated is entered into the system. Values of zero miles are not entered. The Daily Miles Record is used to enter:

(a) miles traveled, scheduled or unscheduled, by a vehicle; and

(b) adjustment to or correction of the miles value entered. A minus sign is included in character position 17 if the value is to be subtracted from the original value.

Figure 4.1-2 describes the format of the Daily Miles Record. This record consists of the following data items:

Character Position	Data Item	COBOL Field Name
1-2	Transaction code (Ø2)	WS-SRV-CODE
3-4	Month } Vehicle operation date	WS-SRV-MO
5-6	Day } Vehicle operation date	WS-SRV-DAY
7-8	Year } Vehicle operation date	WS-SRV-YR
9-12	Vehicle number	WS-SRV-VEH-NBR
13-16	Daily miles	WS-SRV-MILES
17	Miles operator	WS-SRV-MILES-OPR
18-80	Filler	FILLER

FIGURE 4.1-2
INPUT RECORD FORMAT: DAILY MILES

4.1.3 Vehicle Servicing Performed Record

The Vehicle Servicing Performed Record is used to enter:

(a) the quantities of consumables--fuel, oil, coolant, and torque fluid--dispensed to a vehicle each time it is serviced; and

(b) incremental corrections to the original quantity values. A minus sign is included in the character position following the quantity field if the value is to be subtracted from the original value.

The record includes a Terminal I.D. Number field. This provides for the entry of a record that contains the same data elements as an automated data collector record. The inclusion of the Terminal I.D. Numer is not a requirement of the S/U System.

Figure 4.1-3 describes the format of the Vehicle Servicing Performed Record. This record contains the following data items:

Character Position	Data Item	COBOL Field Name
1-2	Transaction code (17)	WS-SRV-CODE
3-4	Month } Vehicle servicing date	WS-SRV-MO }
5-6	Day } Vehicle servicing date	WS-SRV-DAY }
7-8	Year } Vehicle servicing date	WS-SRV-YR }
9-10	Work center (division)	WS-SRV-S-WORK-CTR
11-14	Vehicle number	WS-SRV-S-VEH-NBR
15-18	Fuel (gallons, to one decimal place)	WS-SRV-FUEL-N
19	Fuel operator	WS-SRV-FUEL-OPR
20-22	Oil (quarts, to one decimal place)	WS-SRV-OIL-N
23	Oil operator	WS-SRV-OIL-OPR
24-25	Coolant (quarts)	WS-SRV-COOL-N
26	Coolant operator	WS-SRV-COOL-OPR
27	Torque fluid (quarts)	WS-SRV-TOR-N
28	Torque fluid operator	WS-SRV-TOR-OPR
29-32	Terminal I.D. number	WS-SRV-TERM-ID
33-80	Filler	FILLER

FIGURE 4.1-3
INPUT RECORD FORMAT: VEHICLE SERVICING PERFORMED

4.1.4 Vehicle Inspection Performed Record

The user has the option of entering vehicle inspection performed transactions in the S/U System. As described in Section 4.1.8, each inspection cycle followed by the property is defined before any inspection data specific to a vehicle is entered. Also, the basic vehicle data entered (see Section 4.1.1) include the identity of the inspection scheduled for the vehicle and of the next step in that program to be performed. This creates a record of the inspection due. This information is updated each time a Vehicle Inspection Performed Record is entered, until the user reassigns the vehicle to another program or takes it out of service. The Vehicle Inspection Performed Record is used to enter:

(a) the record of the performance of an inspection (the event recorded has to be the inspection due, and

(b) the correction of an erroneous inspection performed record. This requires the inclusion of a value in the Accumulated Miles at Inspection field and in the Correction Modifier Code field.

Figure 4.1-4 describes the Vehicle Inspection Performed Record. This record contains the following data items:

Character Position	Data Item	COBOL Field Name
1-2	Transaction code (Ø3)	WS-SRV-CODE
3-4	Month } Inspection performed date	WS-SRV-MO
5-6	Day } Inspection performed date	WS-SRV-DA
7-8	Year } Inspection performed date	WS-SRV-YR
9-12	Vehicle number	WS-SRV-VEH-NBR
13-14	Schedule } Inspection performed	WS-SRV-SCH-PER
15-16	Step } Inspection performed	WS-SRV-STEP-PER
17	Job reason code	WS-SRV-REAS-CDE
18-24	Accumulated miles at inspection	WS-SRV-I-ACC-MI
25	Correction modifier code	WS-SRV-COR-CODE
26-27	Work center (division)	WS-SRV-WORK-CTR
28-80	Filler	FILLER

X	2	Transaction Code = Ø3	
	9 6	Inspection Performed Date	M M D D Y Y
	9 4	Vehicle Number	
	9 4	Inspection Performed	Step Schedule
	9 1	Job Reason Code	
S	9 7	Accumulated Miles At Inspection	
X X	1 2	Correction Modifier Code	
	2	Work Center	
	23	Filler	

FIGURE 4.1-4
INPUT RECORD FORMAT: VEHICLE INSPECTION PERFORMED

4.1.5 Unit Change Performed Record

The user has the option of entering unit change performed transactions in the S/U System. As described in Section 4.1.10, a unit must be defined before the first transaction for that specific unit is entered. This definition includes a vehicle group-unit code that identifies the type of unit.

The user option includes the recording of engine re-ring and engine overhaul jobs. These job types are identified by special group-unit codes; these are '0898' and '0899', respectively.

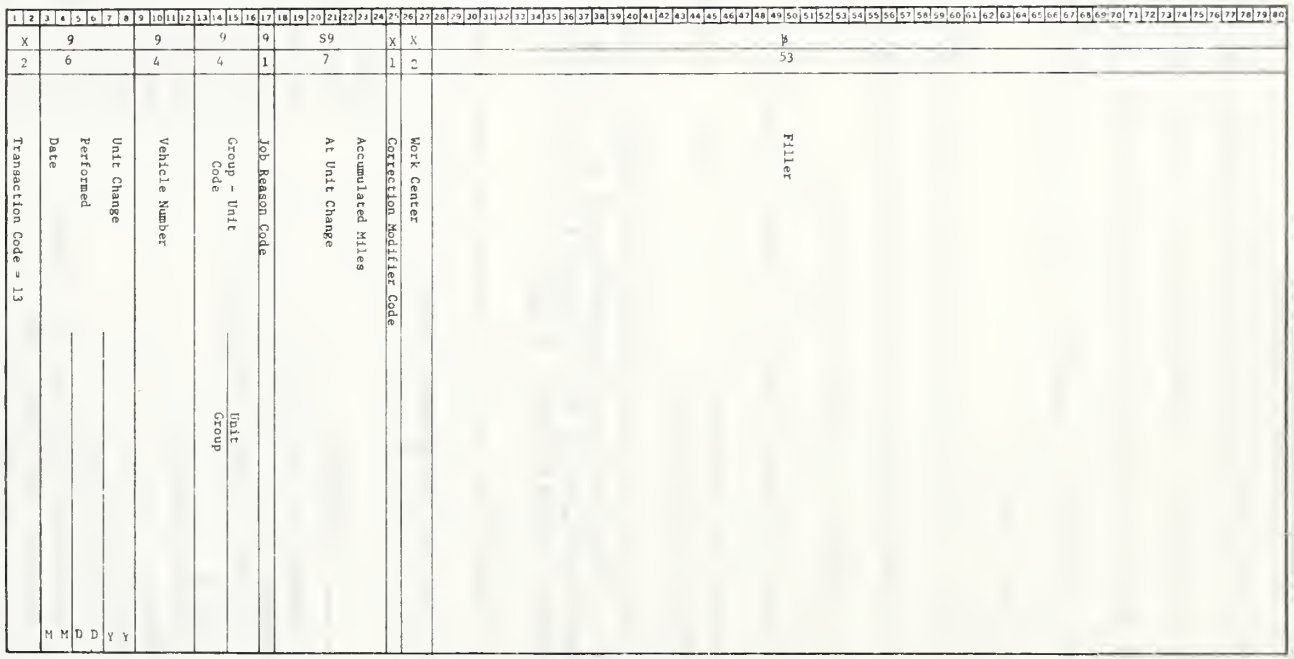
The Unit Change Performed Record is used to enter:

(a) the record of performance of a unit change, engine re-ring, or engine overhaul, and

(b) the correction of an erroneous Unit Change Performed Record. This requires the inclusion of a value in the Accumulated Miles at Unit Change field and in the Correction Modifier Code field.

Figure 4.1-5 describes the Unit Change Performed Record. This record contains the following data items:

Character Position	Data Item		COBOL Field Name
1-2	Transaction code (13)		WS-SRV-CODE
3-4	Month	Unit change performed date	WS-SRV-MO
5-6	Day	Unit change performed date	WS-SRV-DAY
7-8	Year	Unit change performed date	WS-SRV-YR
9-12	Vehicle number		WS-SRV-VEH-NBR
13-14	Group	Group-unit code	WS-SRV-CHG-GRP
15-16	Unit	Group-unit code	WS-SRV-CHG-UNIT
17	Job reason code		WS-SRV-REAS-CODE
18-24	Accumulated miles at unit change		WS-SRV-I-ACC-MI
25	Correction modifier code		WS-SRV-COR-CODE
26-27	Work center (division)		WS-SRV-WORK-CTR
28-80	Filler		FILLER



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
X		9						9				9				9			S9					X	X					

4.1.6 Brake Reline Performed Record

The user has the option of entering brake reline performed transactions in the S/U System. If this option is to be exercised, this type of vehicle maintenance job must be defined. It is defined as if it were a unit to be changed. The group-unit code included in this definition must be 0499, as this code is specified in the computer programs. This code is not included in the transaction record.

The Brake Reline Performed Record is used to enter:

(a) the record of the performance of a brake reline job. This job may involve a reline on all four wheels (a complete reline job) or a reline on one or two wheels (a partial reline job). The record of a complete reline job must include a value in the Brake Lining Code field.

(b) the correction of an erroneous Brake Reline Performed record. This requires the inclusion of a value in the Accumulated Miles at Brake Reline field and in the Correction Modifier Code field.

Figure 4.1-6 describes the Brake Reline Performed Record. This record includes the following data items:

Character Position	Data Item	COBOL Field Name
1-2	Transaction code (15)	WS-SRV-CODE
3-4	Month } Brake reline performed date	WS-SRV-MO }
5-6	Day } Brake reline performed date	WS-SRV-DAY }
7-8	Year } Brake reline performed date	WS-SRV-YR }
9-12	Vehicle number	WS-SRV-VEH-NBR
13	Job reason code	WS-SRV-BRK-REAS
14-16	Brake drum size - left front	WS-SRV-SIZE-LF
17-19	Brake drum size - right front	WS-SRV-SIZE-RF
20-22	Brake drum size - left rear	WS-SRV-SIZE-LR
23-25	Brake drum size - right rear	WS-SRV-SIZE-RR
26-29	Brake lining code	WS-SRV-BRK-LIN
30-36	Accumulated miles at brake reline	WS-SRV-BRK-MI
37	Correction modifier code	WS-SRV-BRK-COR-CODE
38-39	Work center (division)	WS-SRV-BRK-WORK-CTR
40-80	Filler	FILLER

X	2	Transaction Code = 15
9	6	Brake Reline Date (M M D D Y Y)
9	4	Vehicle Number
9	1	Job Reason Code
9	3	Brake Drum Size - LF
9	3	Brake Drum Size - RF
9	3	Brake Drum Size - LR
9	3	Brake Drum Size - RR
X	4	Brake Lining Code
S9	7	Accumulated Miles At Brake Reline
X	1	Correction Modifier Code
X	2	Work Center
	41	Filler

FIGURE 4,1-6
INPUT RECORD FORMAT: BRAKE RELINE PERFORMED

4.1.7 Service System Constants Record

User-specified values for a set of constants and test values are used in the S/U System. The Service System Constants Record is used to enter constants associated with the processing of the Daily Miles Record and the Vehicle Servicing Performed Record. The constants included in the Service System Constants Record are:

(a) the unit prices of consumables,

(b) a daily records purge factor, and

(c) the maximum number of duplicate records allowed before system execution is terminated.

Figure 4.1-7 describes the format of the Service System Constants Record. This record includes the following data items:

Character Position	Data Item	COBOL Field Name
1-2	Transaction code (C1)	WS-SRV-CODE
3-4	Month } Constants date	WS-SRV-MO
5-6	Day } Constants date	WS-SRV-DAY
7-8	Year } Constants date	WS-SRV-YR
9-10	Days' records	WS-SRV-DAY-REC
11-12	Maximum duplicates	WS-SRV-MAX-DUP
13-14	Filler	FILLER
15-18	Oil price (per quart)	WS-SRV-OIL-PR
19-22	Coolant price (per quart)	WS-SRV-COOL-PR
23-24	Fuel type - D1	WS-SRV-FUEL1
25-28	D1 fuel price	WS-SRV-FUEL-PR1
29-30	Fuel type - D2	WS-SRV-FUEL2
31-34	D2 fuel price	WS-SRV-FUEL-PR2
35-36	Fuel type - G1	WS-SRV-FUEL3
37-40	G1 fuel price	WS-SRV-FUEL-PR3
41-42	Fuel type - G2	WS-SRV-FUEL4
43-46	G2 fuel price	WS-SRV-FUEL-PR4
47-48	Fuel type - Liquified natural gas	WS-SRV-FUEL5
49-52	Liquified natural gas price	WS-SRV-FUEL-PR5
53-54	Fuel type - Compressed natural gas	WS-SRV-FUEL6
55-58	Compressed natural gas price	WS-SRV-FUEL-PR6
59-60	Fuel type - Liquified petroleum gases	WS-SRV-FUEL7
61-64	Liquified petroleum gases price	WS-SRV-FUEL-PR7

65-66	Fuel type - Other fuel 1	WS-SRV-FUEL8
67-70	Other fuel 1 price	WS-SRV-FUEL-PR8
71-72	Fuel type - other fuel 2	WS-SRV-FUEL9
73-76	Other fuel 2 price	WS-SRV-FUEL-PR9
77-80	Filler	FILLER

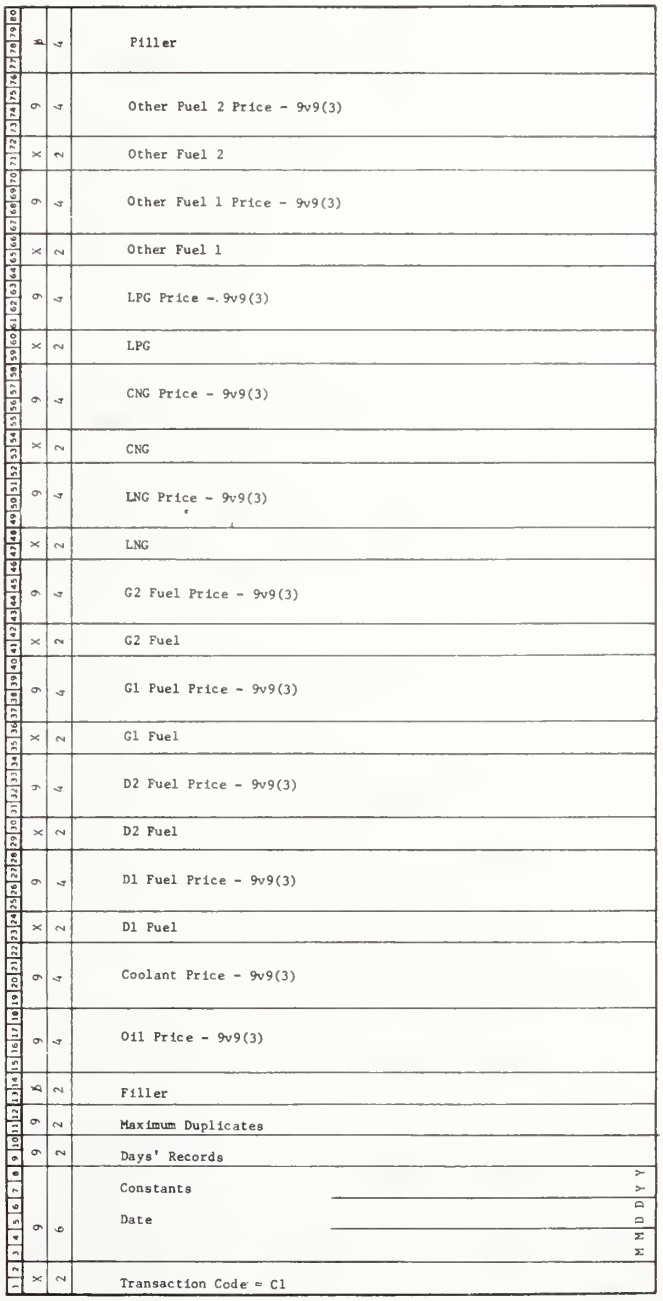


FIGURE 4.1-7
INPUT RECORD FORMAT: SERVICE SYSTEM CONSTANTS

4.1.8 Inspection Schedule Definition Record

As indicated in Section 4.1.4, before the user exercises the option of entering Vehicle Inspection Performed transactions in the S/U System, each inspection cycle followed by the property is defined. The Inspection Schedule Definition Record is used to enter.

(a) numerical codes that identify an inspection schedule and the steps it contains;

(b) the type of inspection each step code represents;

(c) the number of steps in the schedule (this value is entered in the Inspection Type field of step 000; and

(d) the mileage interval between steps (this value is entered in the Inspection Type field of step 99).

To define the inspection schedule, transaction code C5 is included in the record.

This record is also used to delete an inspection schedule definition from the constants file. For this purpose, input values include transaction code, D5, the effective date, and the code that identifies the inspection schedule. Individual steps within a schedule cannot be deleted. Figure 4.1-8 describes the Inspection Schedule Definition Record. This record contains the following data items:

Character Position	Data Item	COBOL Field Name
1-2	Transaction code (C5,D5)	WS-SRV-CODE
3-4	Month | Inspection definition date	WS-SRV-MO
5-6	Day | Inspection definition date	WS-SRV-DAY
7-8	Year | Inspection definition date	WS-SRV-YR
9-10	Inspection schedule	WS-SRV-I-SCH
11-12	Inspection step	WS-SRV-I-STEP
13-14	Inspection type	WS-SRV-INSPEC-TYPE
15-80	Filler	FILLER

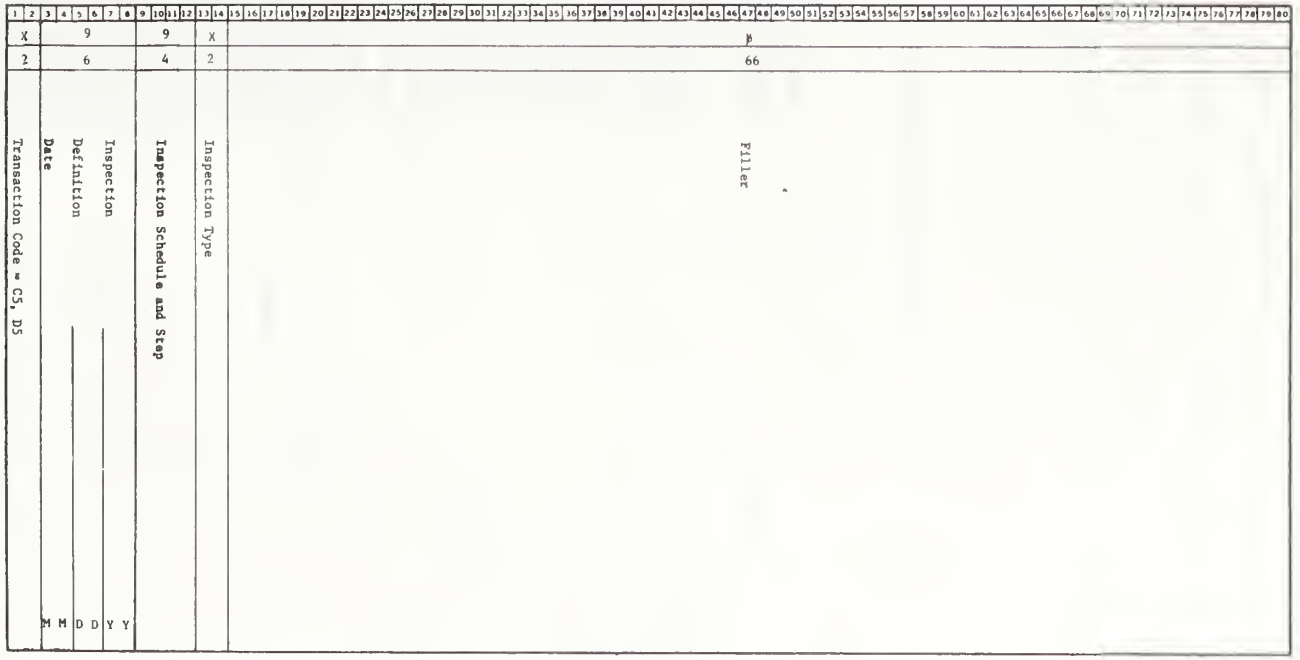


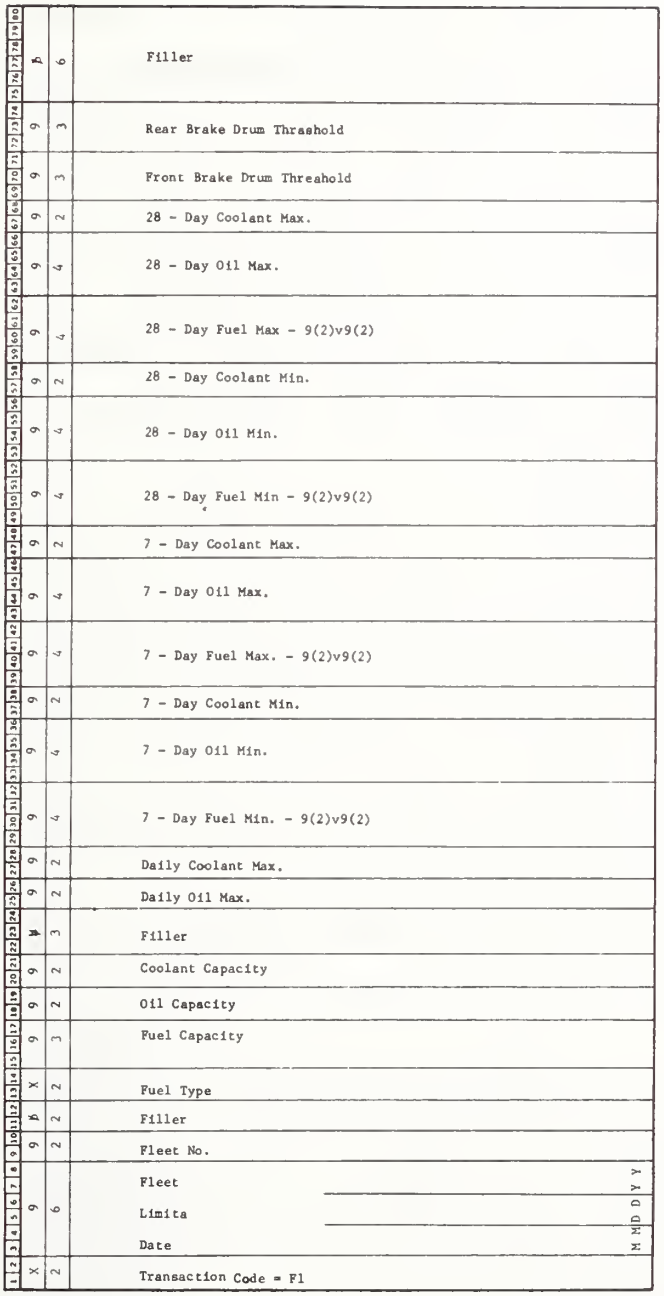
FIGURE 4.1-8
INPUT RECORD FORMAT: INSPECTION SCHEDULE DEFINITION

4.1.9 Fleet Constants and Limits Record

The Fleet Constants and Limits Record is used to enter a set of user-specified test values for a fleet of vehicles. Selected test values are compared to either transaction values or calculated values in several report generator programs. The fuel type associated with a fleet is also included in this record. This data item is used to access the appropriate fuel price used to compute fuel cost during the updating of the Vehicle Master File.

Figure 4.1-9 describes the Fleet Constants and Limits Record. This record includes the following data items:

Character Position	Data Item	COBOL Field Name
1-2	Transaction code (F1)	WS-SRV-CODE
3-4	Month } Fleet limits date	WS-SRV-MO }
5-6	Day } Fleet limits date	WS-SRV-DAY }
7-8	Year } Fleet limits date	WS-SRV-YR }
9-10	Fleet number	WS-SRV-FLT-NBR
11-12	Filler	FILLER
13-14	Fuel type	WS-SRV-FUEL-TYPE
15-17	Fuel capacity	WS-SRV-A-FUEL-CAP
18-19	Oil capacity	WS-SRV-A-OIL-CAP
20-21	Coolant capacity	WS-SRV-A-COOL-CAP
22-24	Filler	FILLER
25-26	Daily oil maximum	WS-SRV-DLY-OIL-MAX
27-28	Daily coolant maximum	WS-SRV-DLY-COOL-MAX
29-32	7-day fuel minimum (m.p.g.)	WS-SRV-WK-F-MIN
33-36	7-day oil minimum (m.p.q.)	WS-SRV-WK-O-MIN
37-38	7-day coolant minimum (quarts)	WS-SRV-WK-C-MIN
39-42	7-day fuel maximum (m.p.g.)	WS-SRV-WK-F-MAX
43-46	7-day oil maximum (m.p.q.)	WS-SRV-WK-O-MAX
47-48	7-day coolant maximum (quarts)	WS-SRV-WK-C-MAX
49-52	28-day fuel minimum (m.p.g.)	WS-SRV-28-F-MIN
53-56	28-day oil minimum (m.p.q.)	WS-SRV-28-O-MIN
57-58	28-day coolant minimum (quarts)	WS-SRV-28-C-MIN
59-62	28-day fuel maximum (m.p.g.)	WS-SRV-28-F-MAX
63-66	28-day oil maximum (m.p.q.)	WS-SRV-28-O-MAX
67-68	28-day coolant maximum (quarts)	WS-SRV-28-C-MAX
69-71	Front brake drum threshold	WS-SRV-FB-THR
72-74	Rear brake drum threshold	WS-SRV-RB-THR
75-80	Filler	FILLER



			Filler
	9	3	Rear Brake Drum Thrashold
	9	3	Front Brake Drum Threahold
	9	2	28 - Day Coolant Max.
	9	4	28 - Day Oil Max.
	9	4	28 - Day Fuel Max - 9(2)v9(2)
	9	2	28 - Day Coolant Min.
	9	4	28 - Day Oil Min.
	9	4	28 - Day Fuel Min - 9(2)v9(2)
	9	2	7 - Day Coolant Max.
	9	4	7 - Day Oil Max.
	9	4	7 - Day Fuel Max. - 9(2)v9(2)
	9	2	7 - Day Coolant Min.
	9	4	7 - Day Oil Min.
	9	4	7 - Day Fuel Min. - 9(2)v9(2)
	9	2	Daily Coolant Max.
	9	2	Daily Oil Max.
		3	Filler
	9	2	Coolant Capacity
	9	2	Oil Capacity
	9	3	Fuel Capacity
	X	2	Fuel Type
		2	Filler
	9	2	Fleet No.
9			Fleet _____
6			Limita _____
			Date M M D D Y Y
X		2	Transaction Code = F1

FIGURE 4.1-9
INPUT RECORD FORMAT: FLEET CONSTANTS AND LIMITS

4.1.10 Vehicle Group-Unit Description Record

As indicated in Section 4.1.5, before the user exercises the option of entering Unit Change Performed transactions in the S/U System, the units must be defined. The Vehicle Group-Unit Description Record is used to enter:

(a) a group-unit code that identifies the unit, and

(b) the brief description, or name, of the unit.

Group-unit codes are user-specified except for three codes that identify specific maintenance jobs. These jobs are:

0898 Engine re-ring
0899 Engine overhaul
0499 Brake reline

These codes have been specified in the computer programs to identify these definable maintenance jobs. The definitions of these types of jobs must be entered in the system if the user elects to maintain records of them.

These codes have been specified in the computer programs to identify these definable maintenance jobs.

Figure 4.1-10 describes the format of the Vehicle Group-Unit Description Record. This record contains the following data items:

Character Position	Data Item		COBOL Field Name
1-2	Transaction code (U1)		WS-SRV-CODE
3-4	Month	Group-unit date	WS-SRV-MO
5-6	Day	Group-unit date	WS-SRV-DAY
7-8	Year	Group-unit date	WS-SRV-YR
9-10	Group	Group-unit code	WS-SRV-GROUP
11-12	Unit	Group-unit code	WS-SRV-UNIT
13-42	Unit name		WS-SRV-UNIT-NAME
43-80	Filler		FILLER

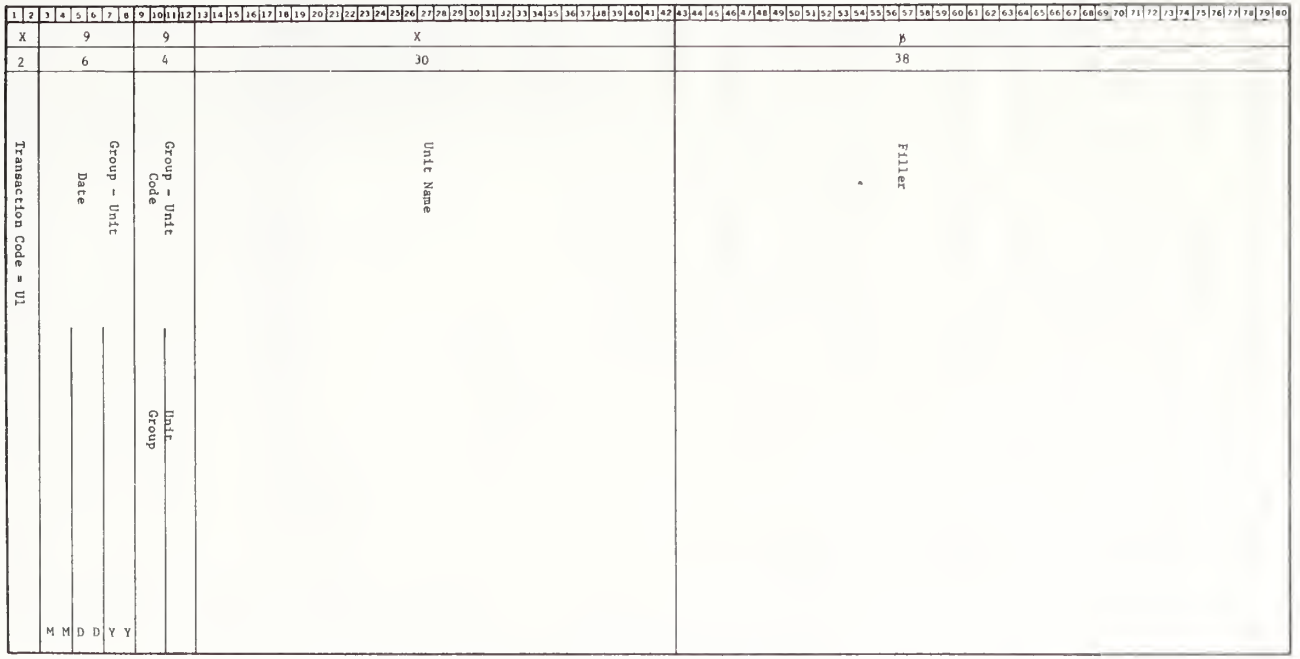


FIGURE 4.1-10
INPUT RECORD FORMAT: VEHICLE GROUP-UNIT DESCRIPTION

4.1.11 Unit Threshold Value Record

If the user elects to maintain records of unit changes, an optional on-demand report can be generated. This report identifies units that are candidates for a unit change. Units are selected by comparing the mileage traveled by the vehicle since the unit was installed, with a test or threshold value. The Unit Threshold Value Record is used to enter a test value specific to the type of unit and to a fleet of vehicles. To enter a threshold value, transaction code T1 is included in the record.

This record is also used to delete a threshold value from the file. For this purpose, the input values include transaction code, DT, the effective date, the fleet number, and the group-unit code.

Figure 4.1-11 describes the format of the Unit Threshold Value Record. This record includes the following data items:

Character Position	Data Item	COBOL Field Name
1-2	Transaction code (T1,DT)	WS-SRV-CODE
3-4	Month	WS-SRV-MO
5-6	Day	WS-SRV-DAY
7-8	Year	WS-SRV-YR
9-10	Fleet number	WS-SRV-TH-FLEET
11-14	Group-unit code	WS-SRV-TH-GU
15-17	Threshold value (thousand miles)	WS-SRV-THRES-VAL
18	(Reserved for Unit Notice Factor)	WS-SRV-NOT-FACTR
19-80	Filler	FILLER

1	2	X	2		Transaction Code = T1, DT
3	6	9	6		Date Last Update (M M D D Y Y)
7	9	9	2		Fleet No.
10	13	9	4		Group - Unit Code
14	16	9	3		Threshold Value (Thousand Miles)
17	18	9	1		Unit Notice Factor
19	80		62		Filler

FIGURE 4.1-11
INPUT RECORD FORMAT: UNIT THRESHOLD VALUE

4.2 Service Data Collector Records

As implemented at ACTD and DTS, the S/U System interfaces with an data collector system. Values of consumables dispensed to a vehicle are recorded automatically. The number of the vehilce is entered manually through a keyboard by the service attendant. The complete record is transmitted and stored on tape for further processing.

4.2.1 ACTD Service Data Collector Record

At ACTD, the data collector system creates an 80-character BCD record. When the record is transmitted, it is stored on 7-channel magnetic tape. The first step in the processing of the data collector information is the transfer of the records from the tape to disk storage through the execution of the utility program IEBGENER. The records are converted into EBCDIC code during this step. During the next processing step, the execution of a special-purpose program (ACTAPE), the records are converted to the format described in Section 4.1.3. The data collector record contains the following data items:

Character Position	Data Item	COBOL Field Name
1-3	Julian date of record	JULIAN-IN
4-7	Time record was recorded	TIME-IN
8	Division	IN-DIV
9	Data collector type (=1)	IN-COLTR
10	Filler	FILLER
11-13	Terminal I.D.	TERM-ID
14-15	Filler	FILLER
16-19	Vehicle number	BUS-NBR
20-31	Filler	FILLER
32	Oil (tens digit) - not used	IN-OIL-TENS
33-36	Fuel (gallons, to one decimal place)	IN-FUEL
37-38	Oil (quarts, to one decimal place)	IN-NUM-OIL
39-40	Coolant (quarts)	IN-COOL
41	Torque fluid (quarts)	IN-TORQUE
42-51	Filler	FILLER
52-54	Valid record indicator	IN-CHECK-CODE
55-80	Filler	FILLER

4.2.2 DTS Service Data Collector Record

At DTS, the automated data collector system creates a 52-character record, in modified ASCII code, on punched paper tape. The tape, containing a day's transactions, is fed into a Mohawk 6405 keytape unit that transcribes the records, character by character, onto magnetic tape.

Other transactions, in the formats described in Section 4.1, are also entered on the same magnetic tape. To distinguish the set of data collector records from the set of other transactions, a Date/Signal record is entered immediately before the first record in each set.

The initial steps in the processing of DTS transactions consist of:

(a) transfer of the input records to disk storage, through the execution of the utility program, IEBGENER; and

(b) translation of the data collector records from ASCII to EBCDIC, and conversion of those records to the S/U format. This is accomplished through the execution of a special-purpose program, DTTAPE.

The data collector record contains the following data items:

Character Position	Data Item	COBOL Field Name
1	Filler	FILLER
2-3	Format code (=A1)	FILLER
4	Filler	FILLER
5-7	Bus number	DC-BUS
8-20	Filler	FILLER
21-24	Fuel (gallons to one decimal place)	DC-FUEL
25-26	Oil (quarts, to one decimal place)	DC-OIL
27-28	Coolant (quarts	DC-COOL
29	Torque Fluid (quarts)	DC-TORQUE
30-42	Filler	FILLER

43-44	Department code (=41)	DC-WORK
45-46	Division code }	DC-TERM
47-48	Terminal code }	
49-50	Filler }	FILLER
51	Error correction code }	
52	End-of-record code (=Z)	FILLER

The reformatted record, output by the program DTTAPE, contains the following data items:

Character Position	Data Item	COBOL Field Name
1-3	Filler	FILLER
4-6	Bus number	DC-BUS
7-19	Filler	FILLER
20-23	Fuel (gallons, to one decimal place)	DC-FUEL
24-25	Oil (quarts, to one decimal place)	DC-OIL
26-27	Coolant (quarts)	DC-COOL
28	Torque fluid (quarts)	DC-TORQUE
29-41	Filler	FILLER
42-43	Department code	DC-WORK
44-47	Terminal I.D.	DC-TERM
48-80	Filler	FILLER

The Date/Signal record, referred to above, contains the following data items:

Character Position	Data Item	COBOL Field Name
1-2	Format code	I-FORMAT-DTE
3-4	Month }	
5-6	Day } transaction date	I-DTE
7-8	Year }	
9	Signal	I-SIGNAL

4.3 Request Cards

Two types of request cards are input to the S/U System. They are date cards and vehicle request cards.

A date card is required to execute each report generator program, the Constants Files Listings Generator program (RP062) and the Transaction Master File Update program (DT200). The date card, which is defined in Section 6.15, contains:

(a) the report request code (card columns 1-2). Table 4.3-1 lists the report request codes together with the system procedures invoked and programs executed through submission of the comparable execute cards.

(b) the report date (card columns 3-8) in the form, 'YYMMDD'.

(c) the report option code (card columns 9-10), if an exception report is requested. Report option codes are defined in Table 4.3-2.

At least one vehicle request card is required to generate:

(a) the Coach History By Unit report (see Section 3.1.9), which displays Transaction Master File records, and

(b) the Vehicle Information Listing (see Section 3.3.1), which displays Vehicle Master File records.

The number of vehicle request cards used to specify the requirements for either report is unlimited.

The vehicle request card, which is defined in Section 6.23, is almost the same for both of the above reports. It contains fields for:

(a) First Coach Number (card columns 1-4).

(b) Last Coach Number (card columns 5-8).

TABLE 4.3-1

REPORT REQUEST CODES

Report Request Code	Report Generated	Procedure Executed	Program Executed
01	Daily Commodities	SRVU01-step SRV09	RP051
03	Commodity Usage	SRVR53	RP053
04	Bus Analysis	SRVR54	RP054
05	Unit Change Candidates	SRVR55	RP055
06	Brake Status	SRVR56	RP056
07	(A)	SRVR57	RP057
08	Units Changed	SRVR58	RP058
09	Unit Status	SRVR59	RP059
10	(A)	SRVUTR	DT200
62	Constants Files	SRVR62	RP062
64	Coach History	SRVR64	RP064
66	Inspection Planning	SRVR66	RP066

(A): These request codes are for functions other than report generation. The functions are:

07 Creation of Monthly Tire Mileage File
10 Update of Transaction Master File

TABLE 4.3-2

REPORT OPTION CODES

REPORT REQUEST CODE	REPORT	REPORT OPTION CODE	OPTION DESCRIPTION
01	Commodity Report	01	Exception report, displaying report data for: (a) Vehicles for which there is more than one servicing record for the report date. (b) Vehicles which have been flagged in accord with program criteria (see Section 7.6).
03	Commodity Usage Report	01	Exception report, displaying report data for vehicles that have violated 28-day commodity limits (see Section 7.7).
		03	Exception report, displayed report data for vehicles that have violated 7-day or 28-day commodity limits (see Section 7.7).
06	Brake Status Report	01	Exception report, displaying report data for vehicles that have exceeded brake mileage or brake drum thresholds (see Section 7.10).

(c) Record Option Code (card columns 9-10).

(d) Division Number(s). The format used for the Coach History Report Generator program allows for the entry of up to 20 division numbers while the format used for the Vehicle Information Listing allows for the entry of only one division.

The Record Option Code field is the only field in which a value must be entered. The code entered specifies the types of records to be displayed on the report. Record option codes are defined in Table 4.3-3.

The coach number fields are used to specify the coaches for which the report is to be generated. Options are:

(a) Both fields blank--all coaches on file.

(b) Low Coach Number only--individual coach specified.

(c) Low Coach Number and High Coach Number--all coaches in the series specified.

Under options (a) and (c), the entry of a division number in the vehicle request card limits the report to coaches assigned to the division or divisions specified.

TABLE 4.3-3

RECORD OPTION CODES

REPORT	OPTION CODE	RECORDS DISPLAYED
Coach History By Unit	00	Inspection and unit change records
	01	Inspection records only
	02	Unit change records only
Vehicle Information Listing	00	All records
	01	Daily records only
	02	Monthly records only
	03	Daily and monthly records
	04	Unit change records only
	05	Unit change and monthly records

Note: Vehicle Information Listing always includes Inspection Performed records, if on file.

4.4 JCL Cards

S/U System procedures can be:

(a) executed in stream, or

(b) cataloged in a procedures library and involved at the time of system execution.

The latter method was used in the implementation of the system at ACTD and at DTS. The cataloged procedures are illustrated in Section 5.0 of this document. The JCL input consists of the job cards, setup cards, and message cards required for job submission, and of execute (EXEC) cards that invoke the cataloged procedures.

The S/U System may be run in one of two ways. The standard run consists of the submission of transaction data for processing and the production of requested reports. The alternative consists of requests for report generators to be executed on a stand-alone basis.

The job deck for the standard run consists of:

(a) job cards, setup cards, and message cards, as required by the computer cente;

(b) an execute card to invoke procedure SRVDATE (under this procedure, the date cards are processed, creating a file of report requests);

(c) a data definition card to indicate the presence of date cards;

(d) the date cards;

(e) an execute card to invoke procedure SRVU01, which processes the input transactions and generates the standard reports automatically;

(f) a data definition card to indicate the presence of transaction cards;

(g) the transaction cards; and

(h) execute cards to invoke the procedures for the desired extra reports. For each execute card, a date card must be included in the run deck.

The execution of report generator programs on a stand-alone basis is accomplished by submitting date cards and execute cards to invoke the procedures for the desired reports. The job setup follows steps (a) through (d) and (h) as described above.

5.0 SYSTEM PROCEDURES

The SIMS S/U System has been implemented at two transit properties, Alameda-Contra Costa Transit District (ACTD) and Dallas Transit System (DTS). In each application, the S/U System is installed at and executed by a service bureau. For ACTD, the service bureau is Optimum Systems, Inc., in Santa Clara, California. For DTS, the service bureau is the municipal computer center.

The S/U System files, except for the Transaction Master File, and program libraries reside on a private disk pack, TMDISK. The Transaction Master File is on magnetic tape. Procedures for executing the system are cataloged in the service bureau's procedure library. These procedures are invoked by user-supplied Job Control Language (JCL) cards.

The execution of the S/U System is described in terms of jobs that, in turn, are broken down into the cataloged procedures that constitute each job. Each procedure is described in this section by a flowchart and a procedure specification. The latter consists of the following items:

Procedure Name:	the name specified in the execute card included in the job deck.
Program Executed:	the identification and name of the program executed under the procedure.
Functions:	the basic purpose of the program is briefly described.
Procedure Flowchart:	a reference to the associated flowchart.

Files:	both input and output files associated with the procedure, identified by file name and data set name. A reference to the section describing each file is provided.
Reports:	reports generated by the program.

The procedures comprising the regular S/U System job, SRVDLY, are described in Section 5.1. Several peripheral procedures have been provided to perform specialized tasks outside of the regular SRVDLY job. These are detailed in Section 5.2.

Listings of cataloged procedures are provided in Section 5.3. These listings are illustrative only. The majority are procedures installed at ACTD. Procedures that are not installed at this location are illustrated by those installed at DTS.

Although the S/U procedures are basically the same at both properties, there are certain differences between the procedures as used at the two properties. These differences are the result of:

(a) output requirements of each property;

(b) the method of data submission;

(c) variation in the operating procedures of the computer centers where the S/U System is installed;

(d) variation in the computer center billing algorithms; and

(e) program region size availability.

These differences are reflected in the illustrated procedures.

5.1 Basic S/U System Job - SRVDLY

The basic job (SRVDLY) is normally executed on a daily basis, except for weekends and holidays. It updates the Vehicle Master File (see Section 6.1), and produces standard user reports and edit reports of input transactions. Optionally, the user may request on-demand reports through execution of cataloged procedures. These on-demand reports are normally executed weekly or monthly. The extra reports may be included in the regular daily job run or may be generated on a stand-alone basis.

Table 5.1-0 lists the cataloged procedures associated with the basic job, SRVDLY. The job stream necessitates execution of the procedures in a specified order. This order is defined in Table 5.1-0

As implemented at DTS, the regular daily run consists of executing procedures SIMAPUT, SRVT01, SRVDATE, and SRVU01, in that order.

Most of the remaining procedures listed in Table 5.1-0, SRVR53 through SRVR57, execute on-demand reports. The exceptions are SRVR57, which produces a disk file, and SRVUTR. The latter procedure updates the Transaction Master File and must be executed before SRVR58 and SRVR64. Any combination of the procedures may be run, depending on the user's requests. The on-demand reports are not dependent on each other, and so failure to execute one will not affect the execution of the others.

Some of the procedures are transit-property specific. This is due to variations in output requirements and input sources. The

TABLE 5.1-0

SRVDLY PROCEDURES

Order of Procedure Execution	Procedure Name	Program(s)	Description
0	SIMAPUT (DTS only)	IEBGENER	Copies DTS data collector tapes to disk
1A	SRVT01 (DTS only)	DTTAPE	DTS data collector tape translator
1B	SRVT03 (ACTD only)	ACTAPE	AC data collector tape translator
2	SRVDATE	IEBGENER	Generates Date Request File
3	SRVU01	DA600 IERRC000 DG700 RP051A(or D) DT100	Edits transactions, updates Vehicles Master File and Monthly Transaction File, and produces daily reports
4	SRVR53	RP053	Generates Commodity Usage Report
5	SRVR54	RP054	Generates Bus Analysis Reports
6	SRVR55	RP055	Generates Unit Change Candidates Report
7	SRVR56 (DTS only)	RP056	Generates Brake Status Report
8	SRVR59 (ACTD only)	RP059	Generates Unit Change Status Report
9	SRVR66	RP066	Generates Inspection Planning Report
10	SRVUTR	DT200	Updates Transaction Master File
11	SRVR58	RP058	Generates Units Changed Report
12	SRVR64	RP064	Generates Coach History By Unit
13	SRVR57 (DTS only)	RP057	Generates a file of tire mileage for the month

procedures specific to DTS are SIMAPUT, SRVT01, SRVR56, and SRVR57. Those specific to ACTD are SRVT03 and SRVR59.

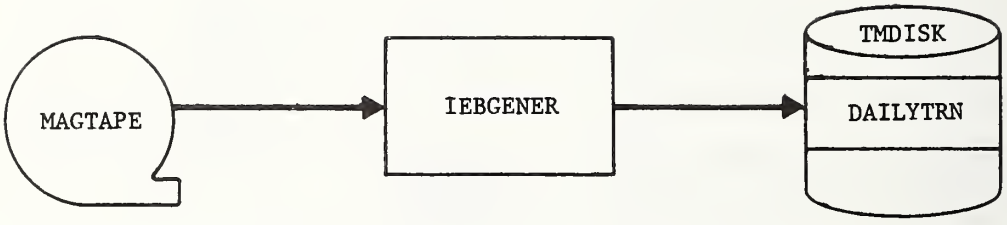


FIGURE 5.1-1
PROCEDURE SIMAPUT

TABLE 5.1-1

PROCEDURE SPECIFICATION

PROCEDURE NAME: SIMAPUT (See note below.)

PROGRAM EXECUTED: IEBGENER - Data Set Copy Utility

FUNCTIONS: To transfer input transaction file from tape to disk.

PROCEDURE FLOWCHART: Figure 5.1-1

FILES:

FILE NAME	DATA SET NAME	SEC. REF.
INPUT:		
DTS Tape Input File	MAGTAPE	6.18
OUTPUT:		
DTS Temporary Disk File	DAILYTRN	6.19

REPORTS:

None.

Note: The procedure name varies in accord with the number, up to five, of input tapes submitted. Procedure names are SIMAPUT1, SIMAPUT2, SIMAPUT3, SIMAPUT4, and SIMAPUT5. The program IEBGENER is executed up to five times once for each input tape.

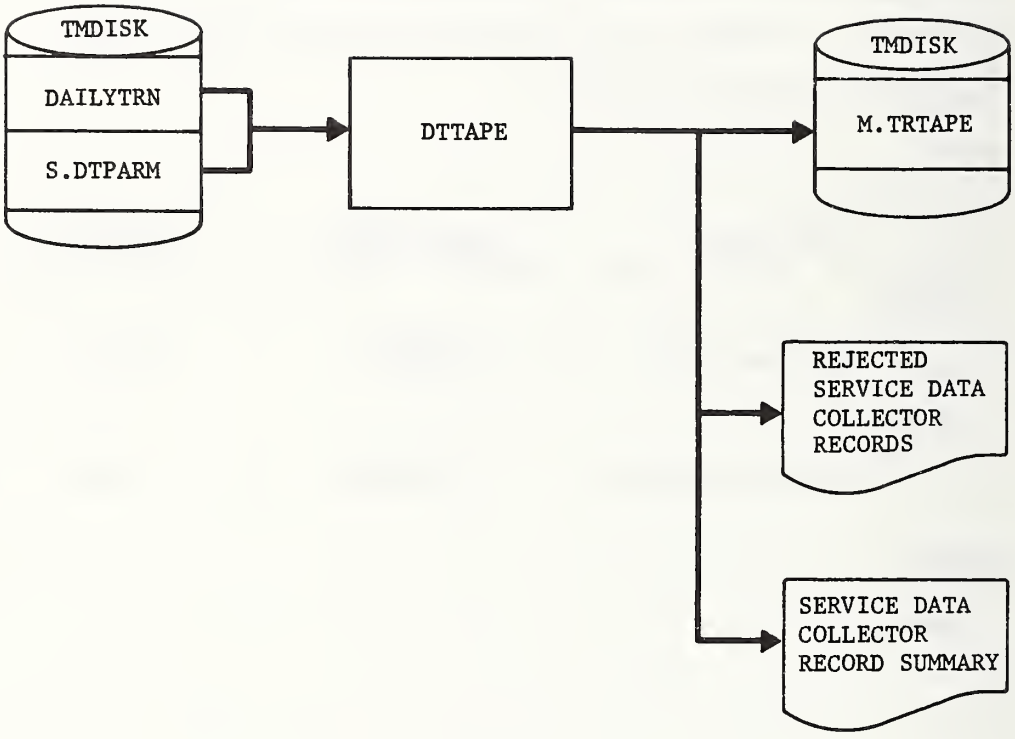


FIGURE 5.1-2
PROCEDURE SRVT01

TABLE 5.1-2

PROCEDURE SPECIFICATION

PROCEDURE NAME: SRVT01

PROGRAM EXECUTED: DTTAPE - Dallas Input Tape Processor

FUNCTIONS: To translate service data collector records from ASCII code to EDCDIC and to edit and reformat these records.

PROCEDURE FLOWCHART: Figure 5.1-2

FILES:

FILE NAME	DATA SET NAME	SEC. REF.
INPUT:		
DTS Temporary Disk File	DAILYTRN	6.19
ASCII Translation File	S.DTPARM	6.22
OUTPUT:		
Daily Transaction File	M.TRTAPE	6.6

REPORTS:

Rejected Service Data Collector Records
Service Data Collector Record Summary

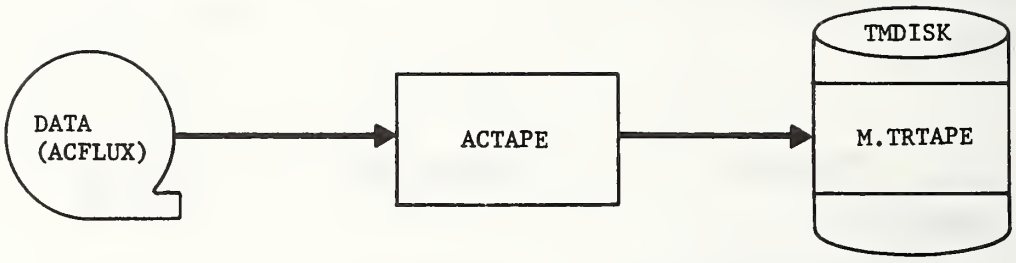


FIGURE 5.1-3
PROCEDURE SRVTO3

TABLE 5.1-3

PROCEDURE SPECIFICATION

PROCEDURE NAME: SRVT03

PROGRAM EXECUTED: ACTAPE - ACTD Input Tape Processor

FUNCTIONS: To reformat service data collector records.

PROCEDURE FLOWCHART: Figure 5.1-3

FILES:

FILE NAME	DATA SET NAME	SEC. REF.
INPUT:		
ACTD Tape Input File	DATA (ACFLUX)	6.17
OUTPUT:		
Daily Transaction File	M.TRTAPE	6.6

REPORTS:

None.

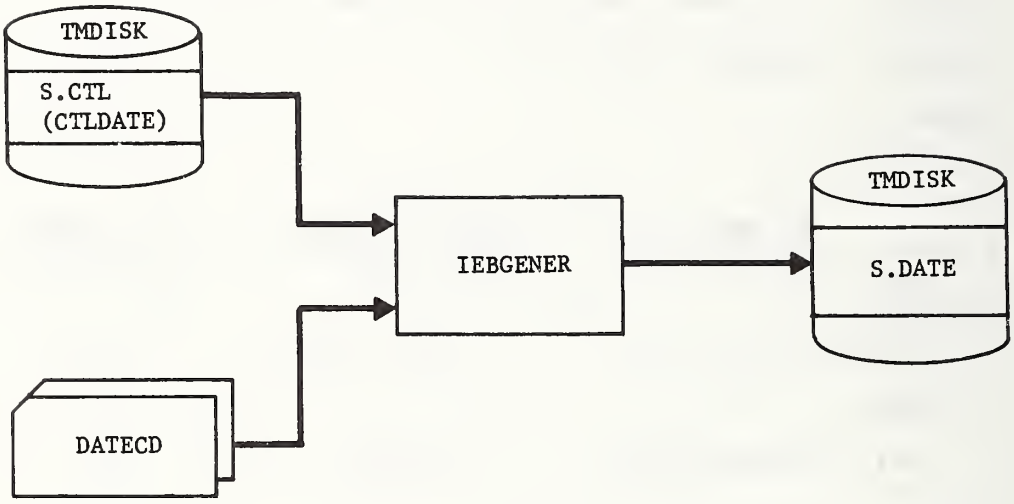


FIGURE 5.1-4
PROCEDURE SRVDATE

TABLE 5.1-4

PROCEDURE SPECIFICATION

PROCEDURE NAME: SRVDATE

PROGRAM EXECUTED: IEBGENER - Data Set Copy Utility

FUNCTIONS: To create Request Date File.

PROCEDURE FLOWCHART: Figure 5.1-4

FILES:

FILE NAME	DATA SET NAME	SEQ. REF.
INPUT:		
Service System Control File	S.CTL(CTLDATE)	6.14
Request Date Card File	DATECD	6.15
OUTPUT:		
Request Date File	S.DATE	6.13

REPORTS:

None.

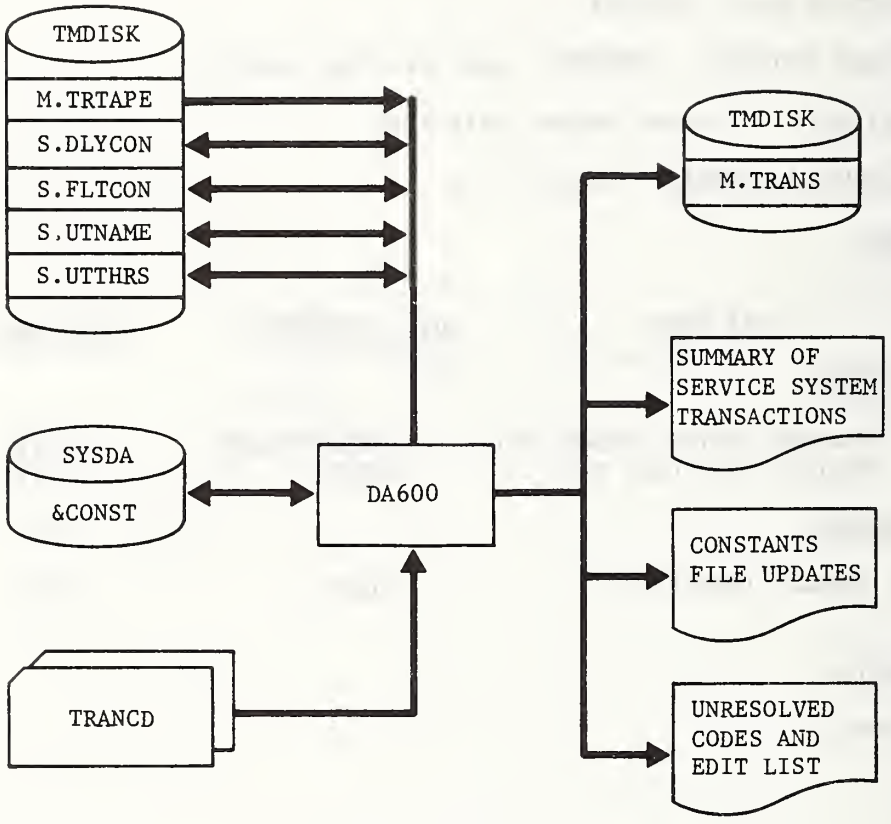


FIGURE 5.1-5
PROCEDURE SRVU01-SRV01

TABLE 5.1-5

PROCEDURE SPECIFICATION

PROCEDURE NAME: SRVU01-SRV01

PROGRAM EXECUTED: DA600 - Data Acceptance

FUNCTIONS: To edit transaction code, date and vehicle number and to update constants files.

PROCEDURE FLOWCHART: Figure 5.1-5

FILES:

FILE NAME	DATA SET NAME	SEC. REF.
INPUT:		
Daily Transaction File	M.TRTAPE	6.6
Daily Constants File	S.DLYCON	6.2
Fleet Constants File	S.FLTCON	6.3
Unit Name File	S.UTNAME	6.4
Unit Threshold File	S.UTTHRS	6.5
Card Input File	TRANCD	6.16
OUTPUT:		
Temporary Storage Transaction File	M.TRANS	6.7
Daily Constants File	S.DLYCON	6.2
Fleet Constants File	S.FLTCON	6.3
Unit Name File	S.UTNAME	6.4
Unit Threshold File	S.UTTHRS	6.5

REPORTS:

Constants File Update
Unresolved Codes and Edit List
Summary of Service Systems Transactions

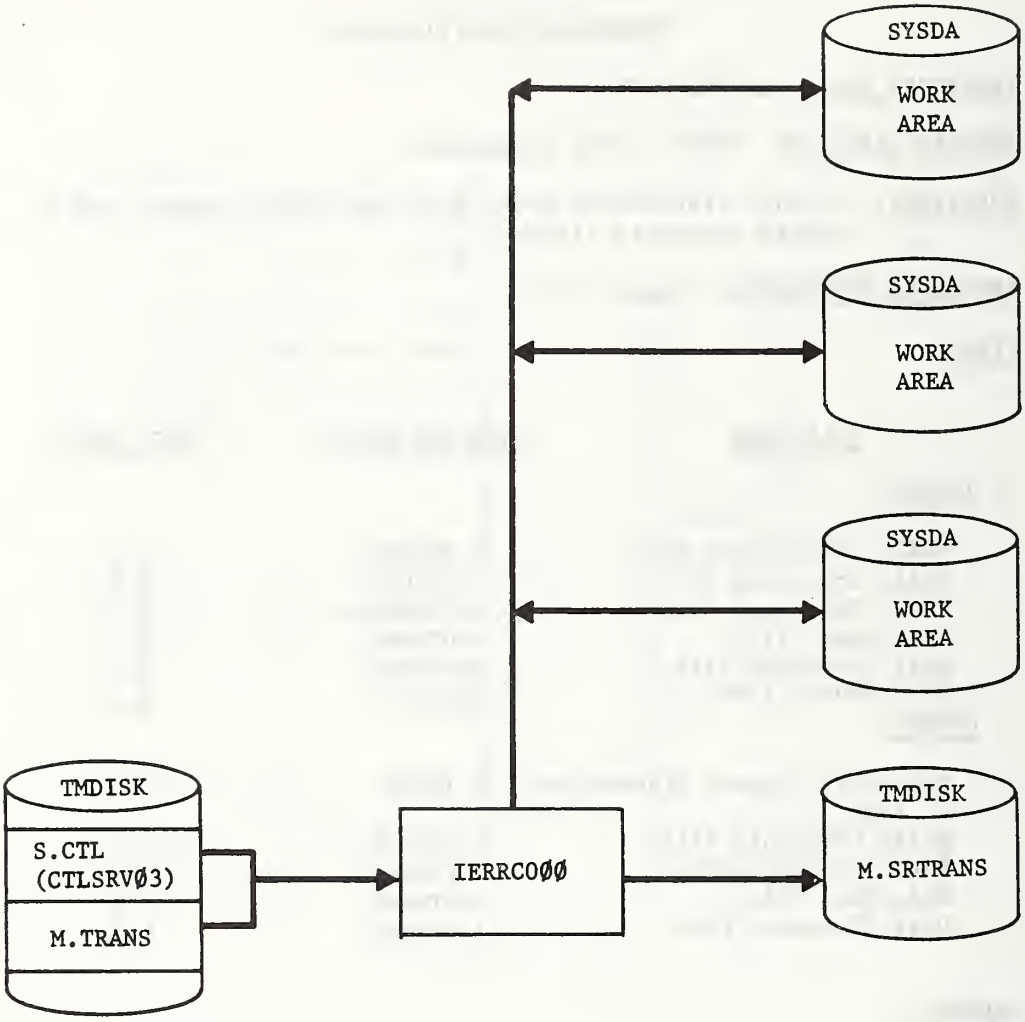


FIGURE 5.1-6
PROCEDURE SRVU01-SRV03

TABLE 5.1-6

PROCEDURE SPECIFICATION

PROCEDURE NAME: SRVU01-SRV03

PROGRAM EXECUTED: IERRC000 - Sort/Merge Utility

FUNCTIONS: To sort transaction records.

PROCEDURE FLOWCHART: Figure 5.1-6

FILES:

FILE NAME	DATA SET NAME	SEC. REF.
INPUT:		
Temporary Storage Transaction File	M.TRANS	6.7
Service System Control File	S.CTL(CTLSRV03)	6.14
OUTPUT:		
Temporary Storage Sorted Transaction File	M.SRTRANS	6.8

REPORTS:

None.

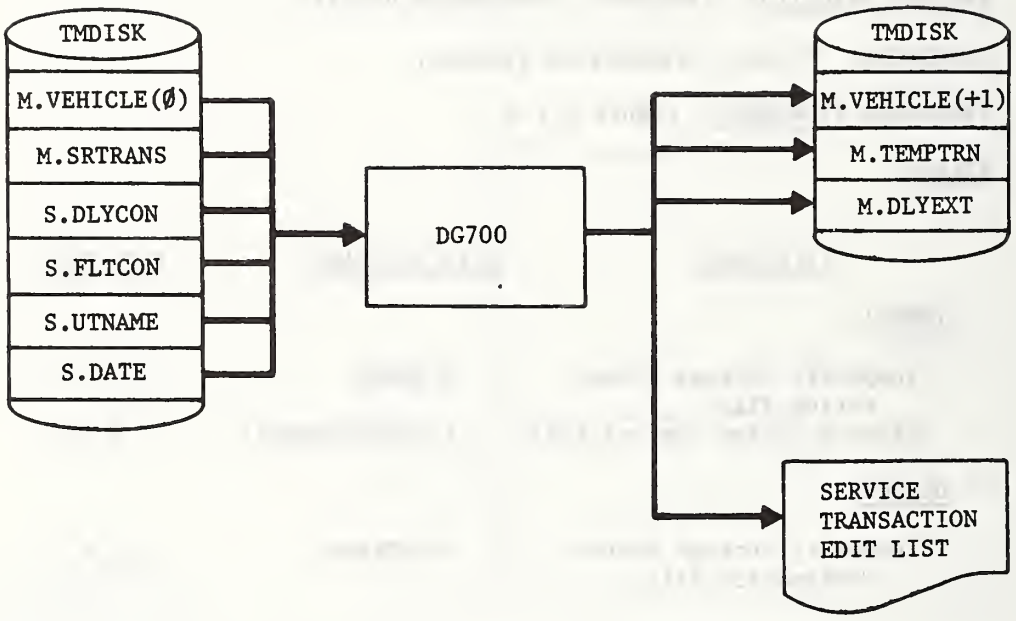


FIGURE 5.1-7
PROCEDURE SRVU01-SRV05

TABLE 5.1-7

PROCEDURE SPECIFICATION

PROCEDURE NAME: SRVU01-SRV05

PROGRAM EXECUTED: DG700 - Vehicle Master File Edit/Update

FUNCTIONS: To edit daily transactions, update the Vehicle Master File, store selected transaction records, and create the Daily Extract File.

PROCEDURE FLOWCHART: Figure 5.1-7

FILES:

FILE NAME	DATA SET NAME	SEC. REF.
INPUT:		
Vehicle Master File	M.VEHICLE (0)	6.1
Temporary Storage Sorted Transaction File	M.SRTRANS	6.8
Daily Constants File	S.DLYCON	6.2
Fleet Constants File	S.FLTCON	6.3
Unit Name File	S.UTNAME	6.4
Request Date File	S.DATE	6.13
OUTPUT:		
Vehicle Master File	M.VEHICLE(+1)	6.1
Temporary Transaction File	M.TEMPTRN	6.10
Daily Extract File	M. DLYEXT	6.9

REPORTS:

Service Transaction Edit List

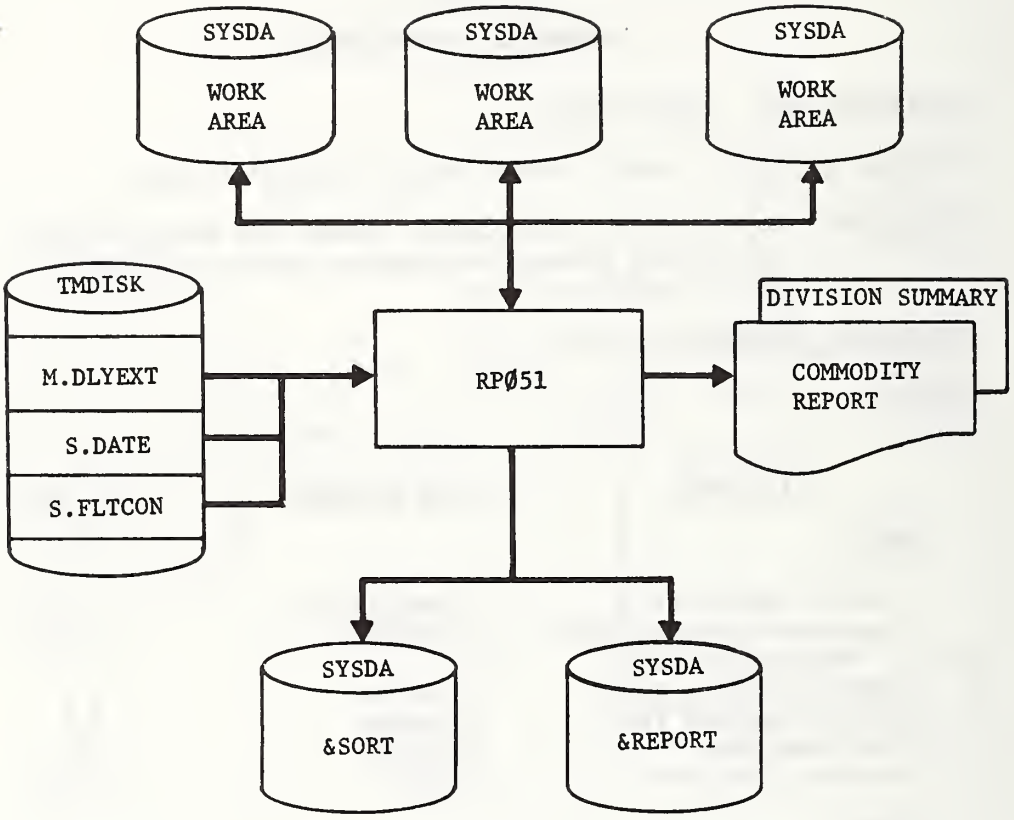


FIGURE 5.1-8
PROCEDURE SRVU01-SRV09

TABLE 5.1-8

PROCEDURE SPECIFICATION

PROCEDURE NAME: SRVU01-SRV09

PROGRAM EXECUTED: RP051 - Commodity Report Generator

FUNCTIONS: To generate daily reports of consumables dispensed and vehicle mileage traveled (see note).

PROCEDURE FLOWCHART: Figure 5.1-8

FILES:

FILE NAME	DATA SET NAME	SEC. REF.
INPUT:		
Daily Extract File	M.DLYEXT	6.9
Request Date File	S.DATE	6.13
Fleet Constants File	S.FLTCON	6.3
OUTPUT:		
None.		

REPORTS:

Commodity Report
Division Summary

NOTE: The reporting of inspections performed is an option available to the user.

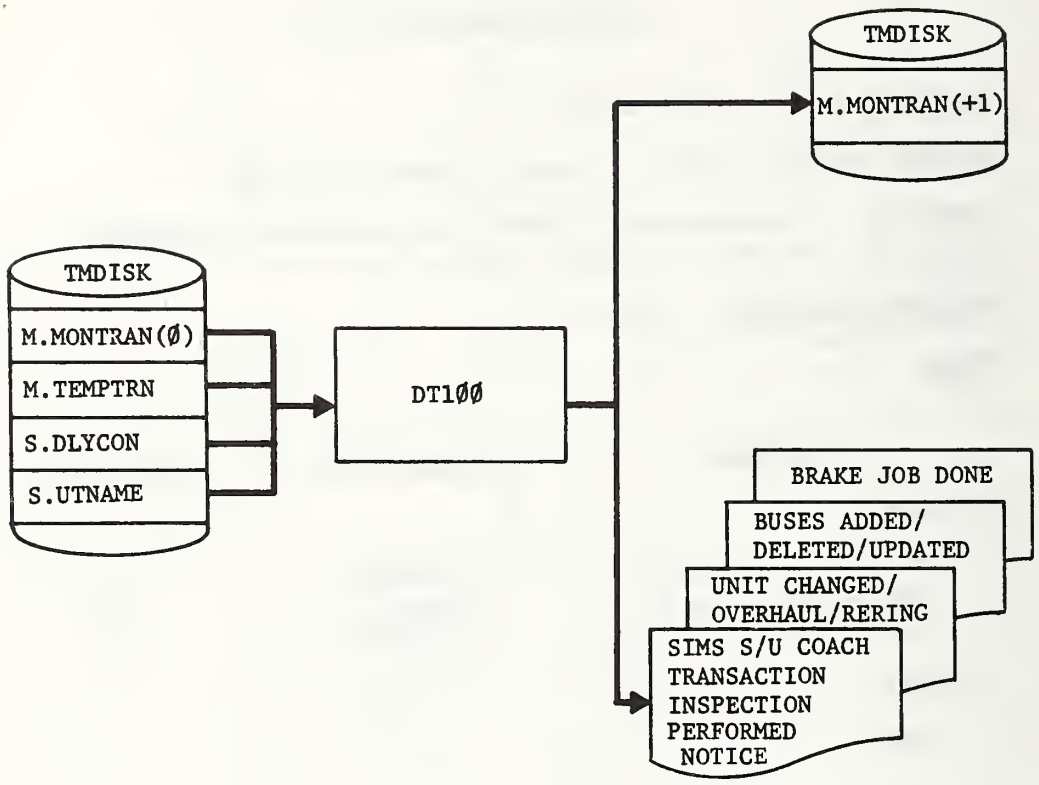


FIGURE 5.1-9
PROCEDURE SRVU01-SRV11

TABLE 5.1-9

PROCEDURE SPECIFICATION

PROCEDURE NAME: SRVU01-SRV11

PROGRAM EXECUTED: DT100 - Transaction Disk File Update

FUNCTIONS: To update Monthly Transaction File and generate daily reports of selected types of transactions processed.

PROCEDURE FLOWCHART: Figure 5.1-9

FILES:

FILE NAME	DATA SET NAME	SEC. REF.
INPUT:		
Monthly Transaction File	M. MONTRAN(0)	6.11
Temporary Transaction File	M.TEMPTRN	6.10
Daily Constants File	S.DLYCON	6.2
Unit Name File	S.UTNAME	6.4
OUTPUT:		
Monthly Transaction File	M.MONTRAN(+1)	6.11

REPORTS:

SIMS S/U Coach Transactions:

1. Inspection Performed Notice
2. Unit Changed/Rering/Overhaul
3. Buses Added/Deleted/Updated
4. Brake Job Done

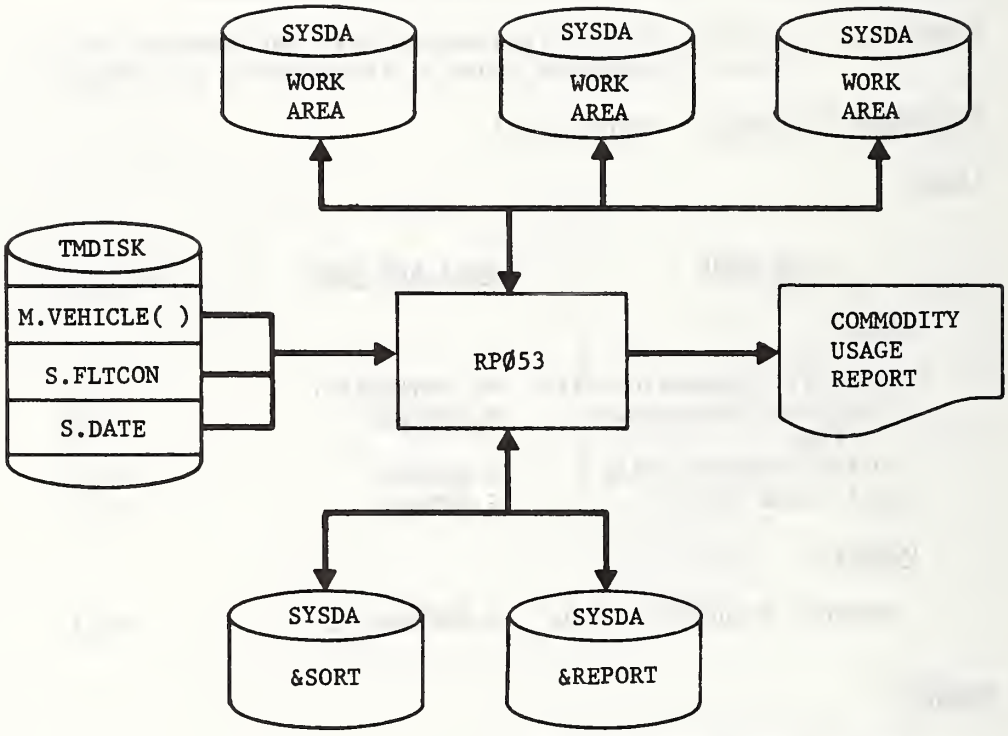


FIGURE 5.1-10
PROCEDURE SRVR53

TABLE 5.1-10

PROCEDURE SPECIFICATION

PROCEDURE NAME: SRVR53

PROGRAM EXECUTED: RP053 - Commodity Usage Report Generator

FUNCTIONS: To generate the Commodity Usage Report

PROCEDURE FLOWCHART: Figure 5.1-10

FILES:

FILE NAME	DATA SET NAME	SEC. REF.
INPUT:		
Vehicle Master File	M.VEHICLE( )	6.1
Fleet Constants File	S.FLTCON	6.3
Request Date File	S.DATE	6.13
OUTPUT:		
None.		

REPORTS:

Commodity Usage Report

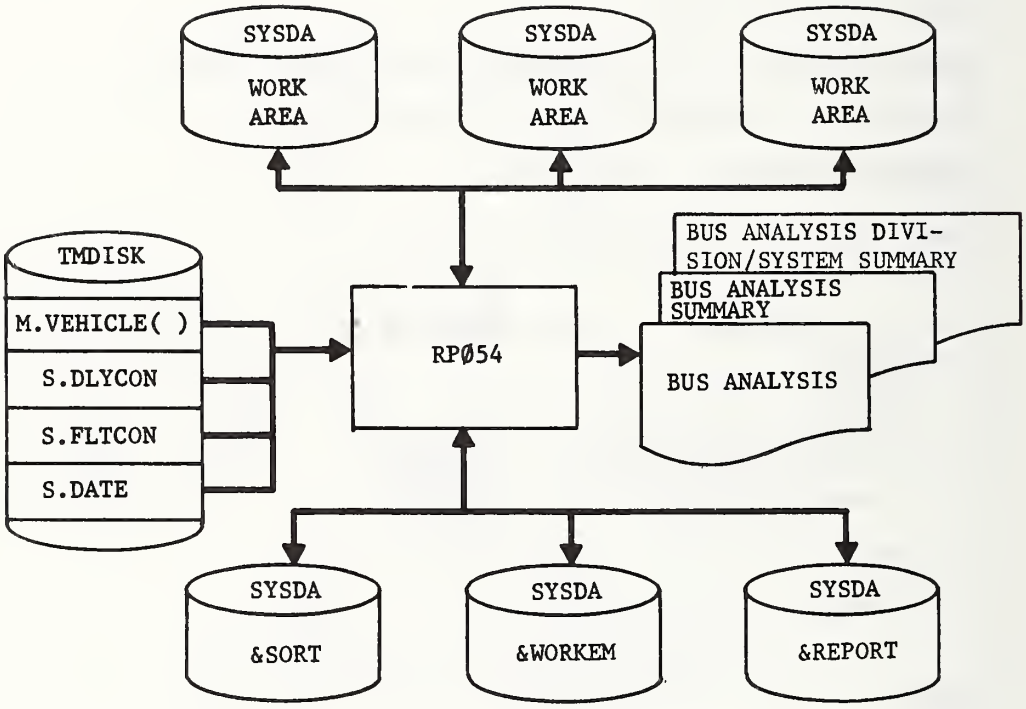


FIGURE 5.1-11
PROCEDURE SRVR54

TABLE 5.1-11

PROCEDURE SPECIFICATION

PROCEDURE NAME: SRVR54

PROGRAM EXECUTED: RP054 - Bus Analysis Report Generator

FUNCTIONS: To generate Bus Analysis Report and summary reports.

PROCEDURE FLOWCHART: Figure 5.1-11

FILES:

FILE NAME	DATA SET NAME	SEC. REF.
INPUT:		
Vehicle Master File	M.VEHICLE ( )	6.1
Daily Constants File	S.DLYCON	6.2
Fleet Constants File	S.FLTCON	6.3
Request Date File	S.DATE	6.13
OUTPUT:		
None.		

REPORTS:

Bus Analysis
Bus Analysis Summary
Bus Analysis Division/System Summary

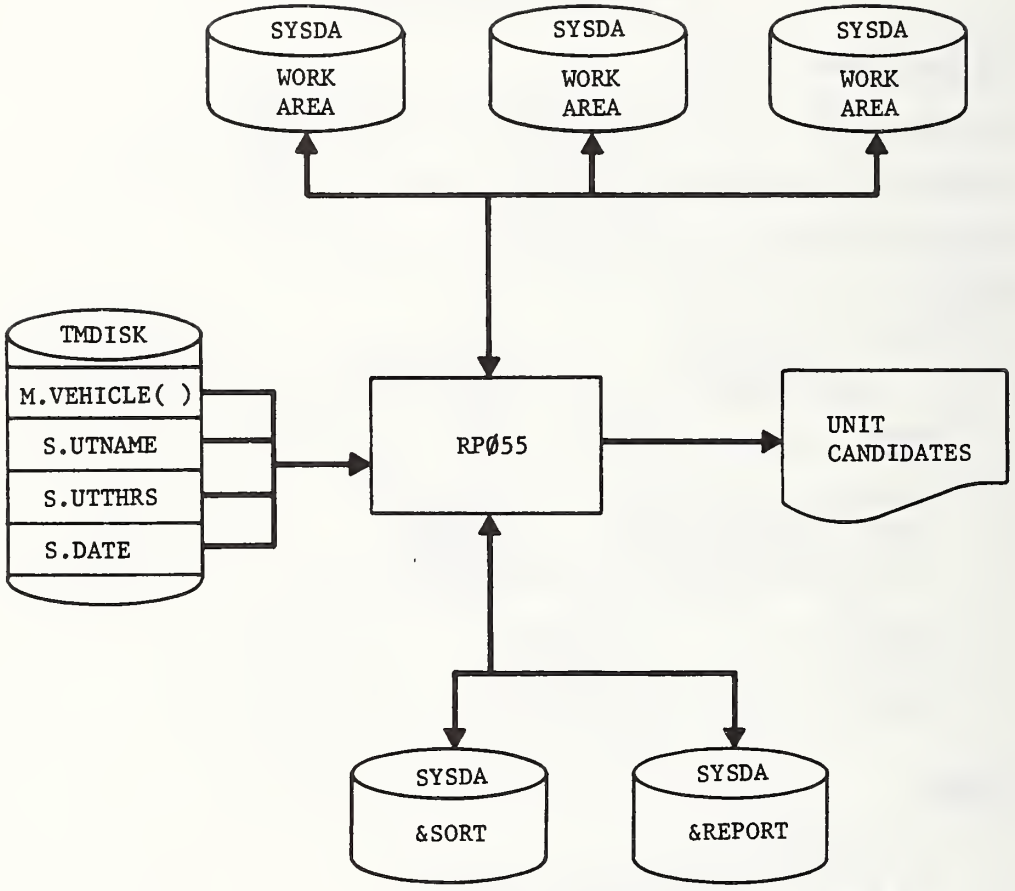


FIGURE 5.1-12
PROCEDURE SRVR55

TABLE 5.1-12

PROCEDURE SPECIFICATION

PROCEDURE NAME: SRVR55

PROGRAM EXECUTED: RP055 - Unit Change Candidates Report Generator

FUNCTIONS: To generate Unit Candidates Report and Rering/Overhaul Candidates Report.

PROCEDURE FLOWCHART: Figure 5.1-12

FILES:

FILE NAME	DATA SET NAME	SEC. REF.
INPUT:		
Vehicle Master File	M.VEHICLE ( )	6.1
Unit Name File	S.UTNAME	6.4
Unit Threshold File	S.UTTHRS	6.5
Request Date File	S.DATE	6.13
OUTPUT:		
None.		

REPORTS:

Unit Change Candidates

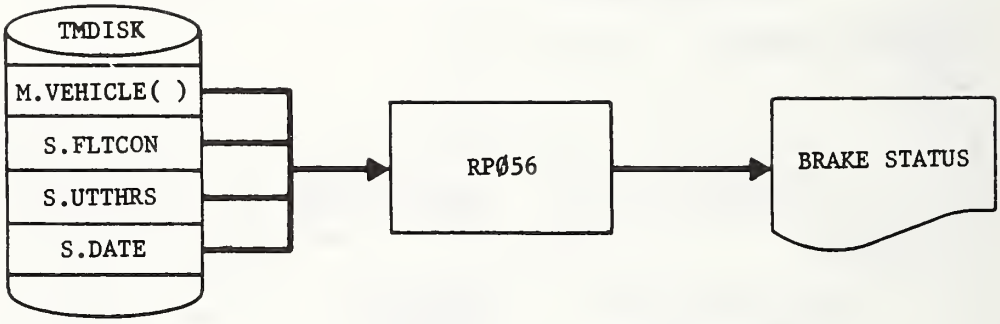


FIGURE 5.1-13
PROCEDURE SRVR56

TABLE 5.1-13

PROCEDURE SPECIFICATION

PROCEDURE NAME: SRVR56

PROGRAM EXECUTED: RP056 - Brake Status Report Generator

FUNCTIONS: To generate the Brake Status Report.

PROCEDURE FLOWCHART: Figure 5.1-13

FILES:

FILE NAME	DATA SET NAME	SEC. REF.
INPUT:		
Vehicle Master File	M.VEHICLE( )	6.1
Fleet Constants File	S.FLTCON	6.3
Unit Thresholds File	S.UTTHRS	6.5
Request Date File	S.DATE	6.13
OUTPUT:		
None.		

REPORTS:

Brake Status

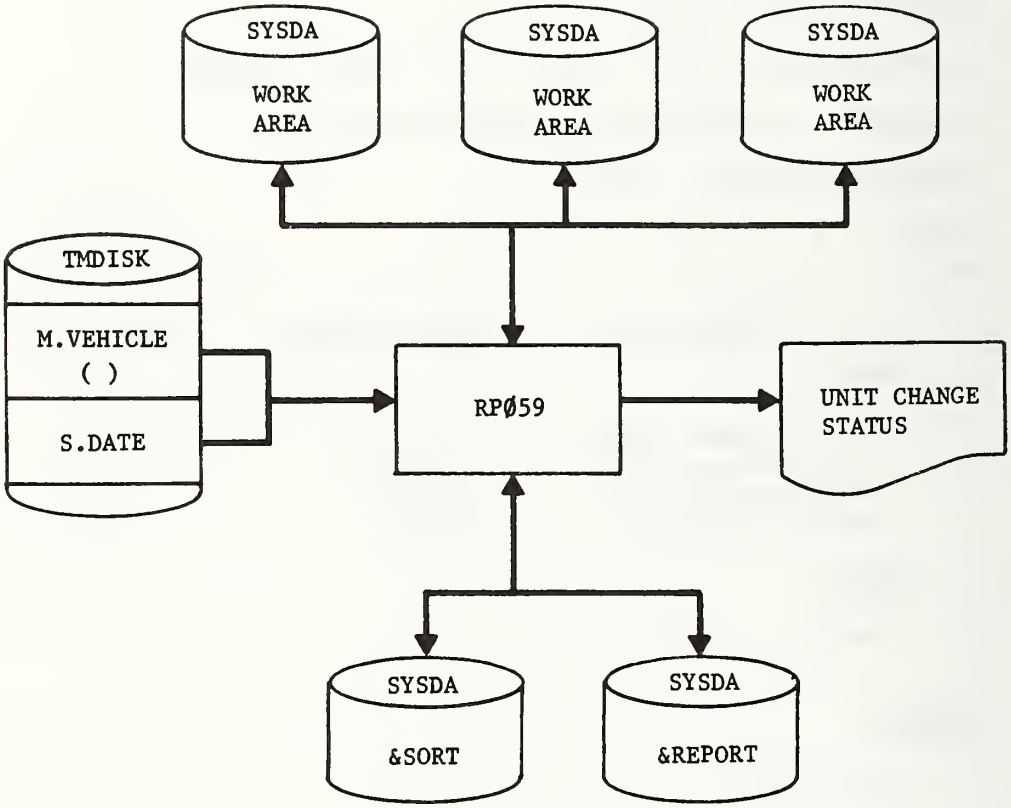


FIGURE 5.1-14
PROCEDURE SRVR59

TABLE 5.1-14

PROCEDURE SPECIFICATION

PROCEDURE NAME: SRVR59

PROGRAM EXECUTED: RP059 - Unit Status Report Generator

FUNCTIONS: To generate Unit Change Status Report.

PROCEDURE FLOWCHART: Figure 5.1-14

FILES:

FILE NAME	DATA SET NAME	SEC. REF.
INPUT:		
Vehicle Master File	M.VEHICLE( )	6.1
Request Date File	S.DATE	6.13
OUTPUT:		
None.		

REPORTS:

Unit Change Status

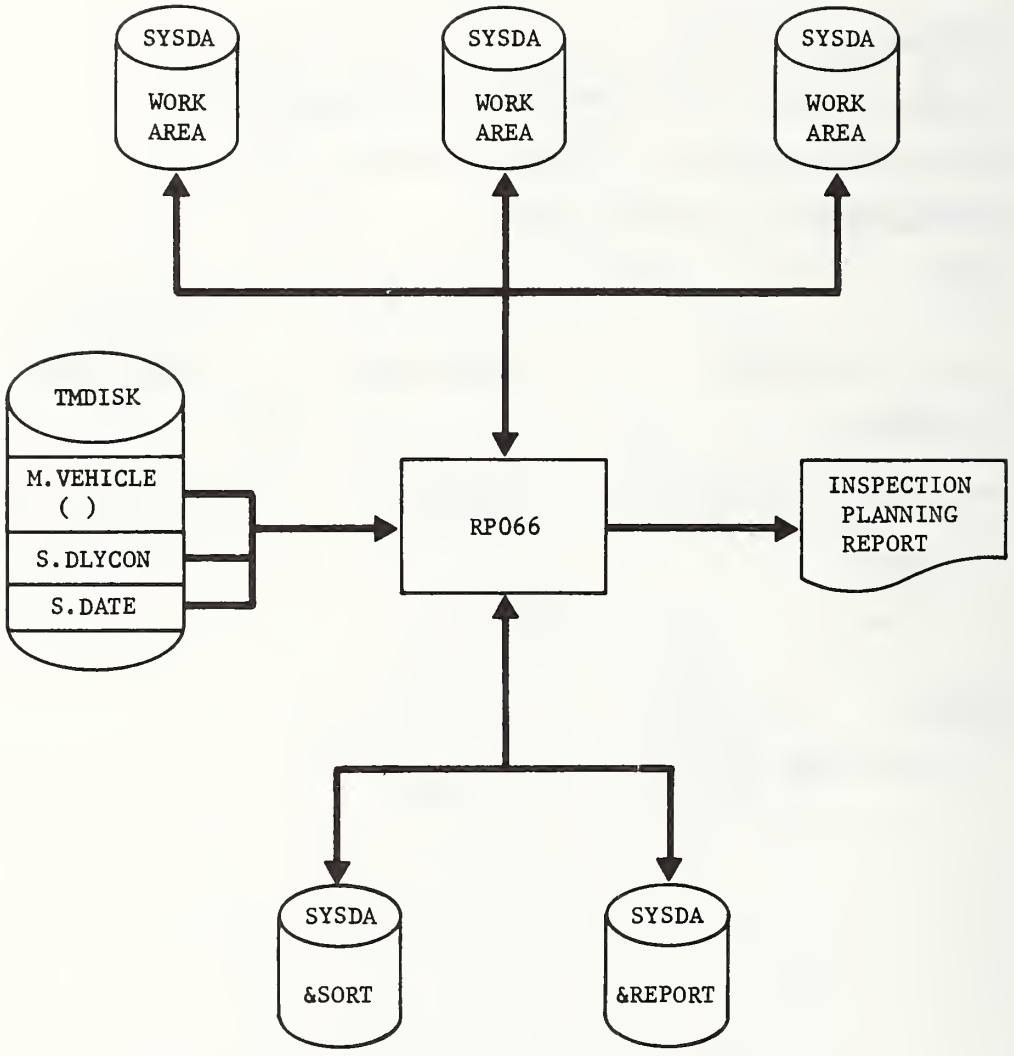


FIGURE 5.1-15
PROCEDURE SRVR66

TABLE 5.1-15

PROCEDURE SPECIFICATION

PROCEDURE NAME: SRVR66

PROGRAM EXECUTED: RP066 - Inspection Planning Report Generator

FUNCTIONS: To generate Inspection Planning Report

PROCEDURE FLOWCHART: Figure 5.1-15

FILES:

FILE NAME	DATA SET NAME	SEC. REF.
INPUT:		
Vehicle Master File	M. VEHICLE( )	6.1
Daily Constants File	S.DLYCON	6.2
Request Date File	S.DATE	6.13
OUTPUT:		
None		

REPORTS:

Inspection Planning Report

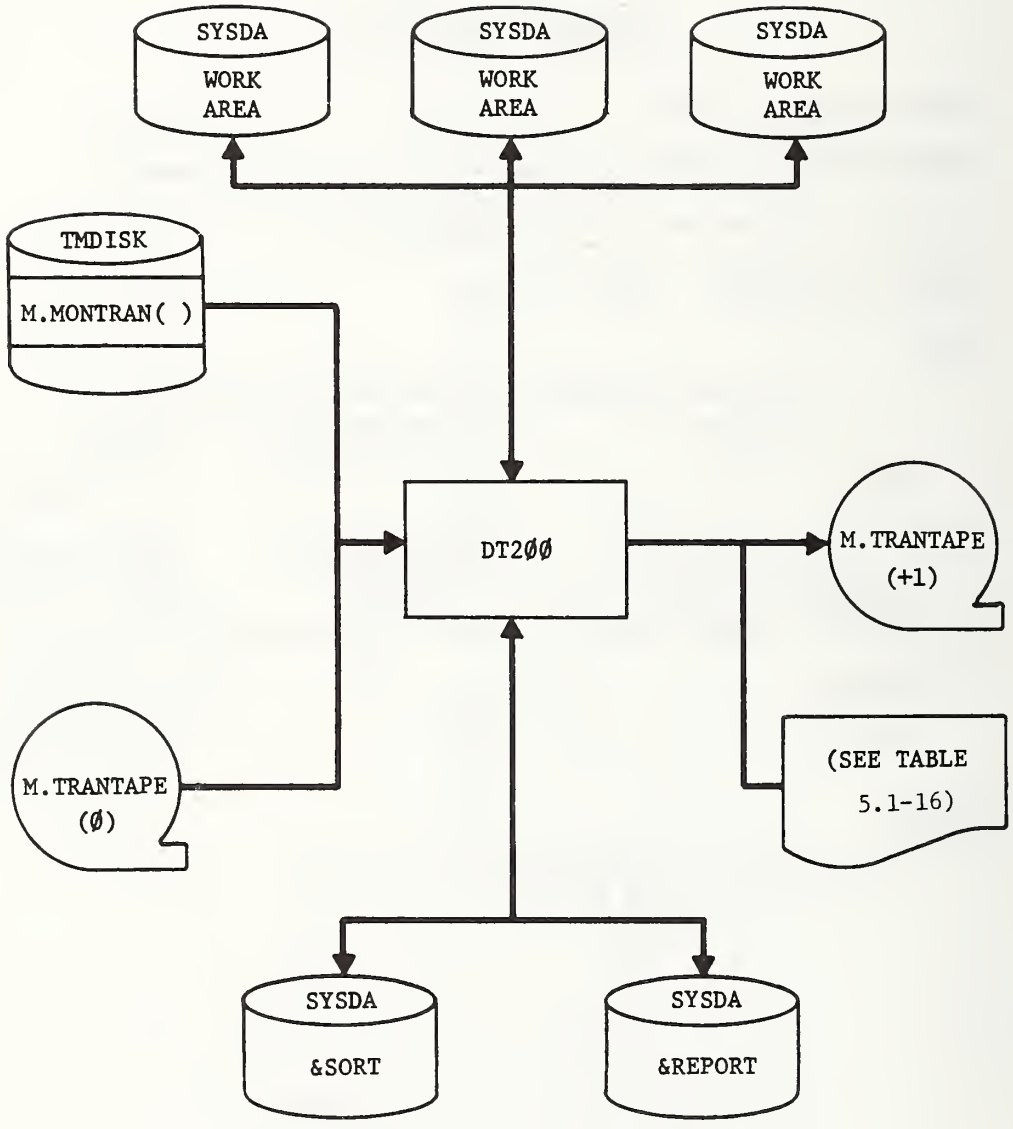


FIGURE 5.1-16
PROCEDURE SRVUTR

TABLE 5.1-16

PROCEDURE SPECIFICATION

PROCEDURE NAME: SRVUTR

PROGRAM EXECUTED: DT200 - Transaction Master File Update

FUNCTIONS: To update the Transaction Master File.

PROCEDURE FLOWCHART: Figure 5.1-16

FILES:

FILE NAME	DATA SET NAME	SEC. REF.
INPUT:		
Monthly Transaction File	M.MONTRAN(0)	6.11
Transaction Master File	M.TRANTAPE(0)	6.12
OUTPUT:		
Transaction Master File	M.TRANTAPE(+1)	6.12

REPORTS:

If a record in the data set, M.MONTRAN, cannot be processed, an untitled report is generated. This report lists all such records.

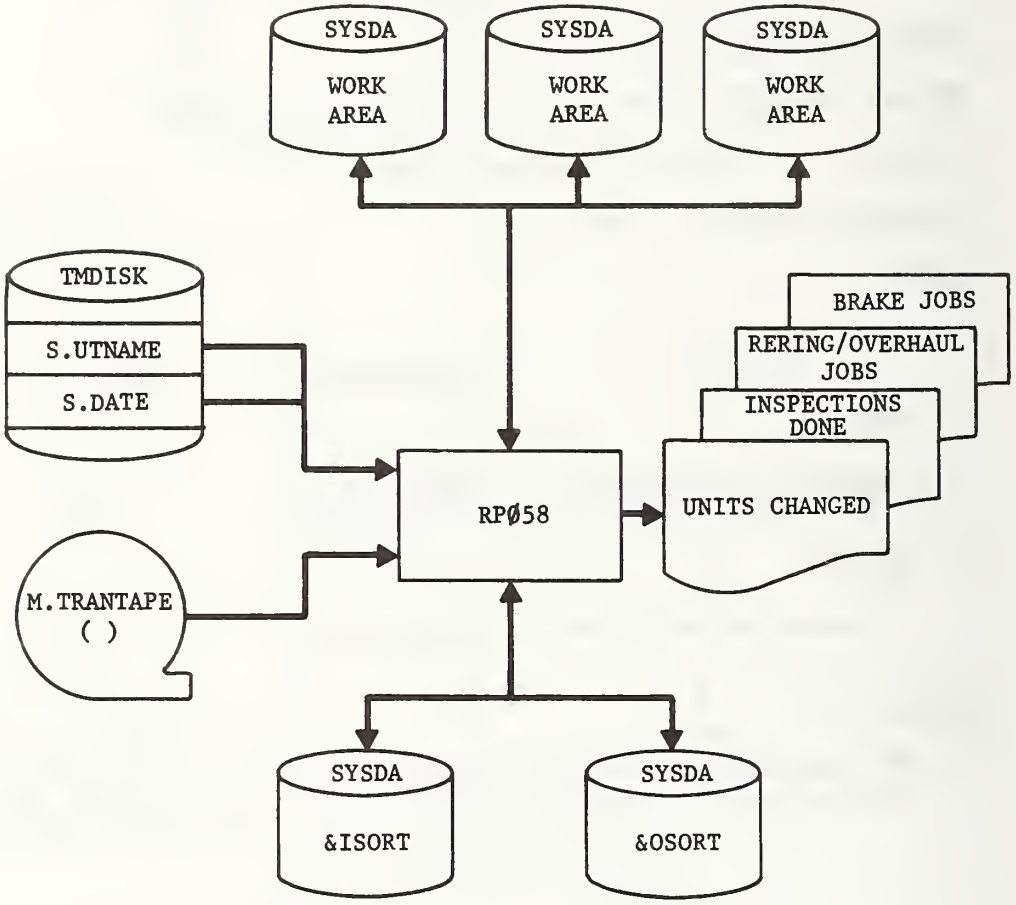


FIGURE 5.1-17
PROCEDURE SRVR58

TABLE 5.1-17

PROCEDURE SPECIFICATION

PROCEDURE NAME: SRVR58

PROGRAM EXECUTED: RP058 - Units Changed Report Generator

FUNCTIONS: To generate reports of vehicle maintenance jobs performed.

PROCEDURE FLOWCHART: Figure 5.1-17

FILES:

FILE NAME	DATA SET NAME	SEC. REF.
INPUT:		
Transaction Master File	M.TRANTAPE( )	6.12
Unit Name File	S.UTNAME	6.4
Request Date File	S.DATE	6.13
OUTPUT:		
None.		

REPORTS:

Units Changed
Inspections Done
Rering/Overhaul Jobs
Brake Jobs

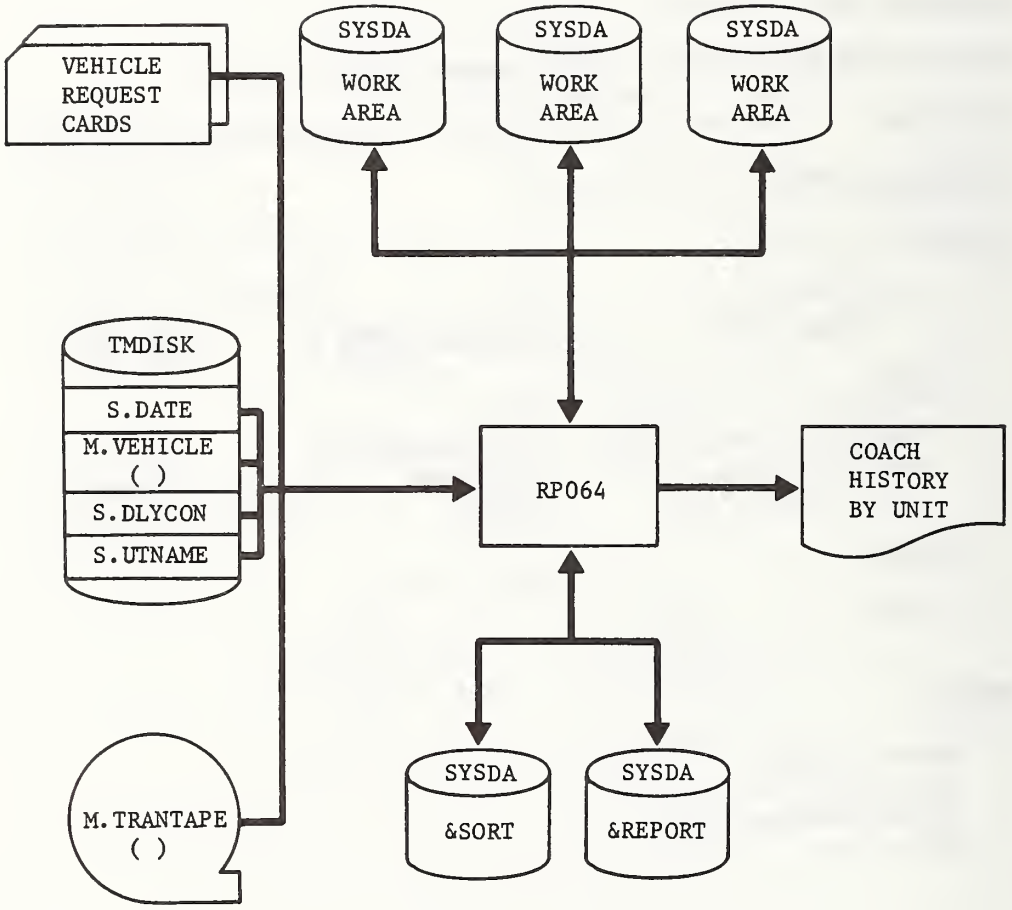


FIGURE 5.1-18
PROCEDURE SRVR64

TABLE 5.1-18

PROCEDURE SPECIFICATION

PROCEDURE NAME: SRVR64

PROGRAM NAME: RP064 - Coach History Report Generator

FUNCTIONS: To generate Coach History By Unit Report.

PROCEDURE FLOWCHART: Figure 5.1-18

FILES:

FILE NAME	DATA SET NAME	SEC. REF.
INPUT:		
Vehicle Master File	M.VEHICLE( )	6.1
Daily Constants File	S.DLYCON	6.2
Unit Name File	S.UTNAME	6.4
Transaction Master File	M.TRANTAPE( )	6.12
Request Date File	S.DATE	6.13
Vehicle Request Cards	SYSIN	6.23
OUTPUT:		
None		

REPORTS:

Coach History By Unit

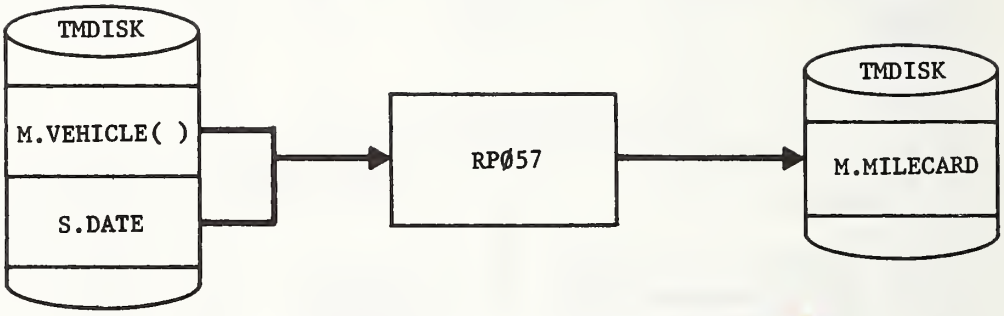


FIGURE 5.1-19
PROCEDURE SRVR57

TABLE 5.1-19

PROCEDURE SPECIFICATION

PROCEDURE NAME: SRVR57

PROGRAM EXECUTED: RP057 - Monthly Tire Mileage Processor

FUNCTIONS: To create a separate data set containing daily mileage records.

PROCEDURE FLOWCHART: Figure 5.1-19

FILES:

FILE NAME	DATA SET NAME	SEC. REF.
INPUT:		
Vehicle Master File	M.VEHICLE( )	6.1
Request Date File	S.DATE	6.13
OUTPUT:		
Monthly Tire Mileage File	M.MILECARD	6.20

REPORTS:

None.

5.2 Other S/U System Procedures

In addition to the procedures executed in SRVDLY, five optional procedures have been provided. These perform specialized functions outside the realm of SRVDLY. A table listing the procedure specification and a figure giving the procedure flowchart have been provided for each.

5.2.1 Vehicle Master File List Procedure (VHLIST)

The Vehicle Master File List procedure enables the user to print the file records for a specified set of vehicles from the Vehicle Master File. This capability will assist the transit property to analyze possible data problems.

This procedure is executed on demand and is run as a stand-alone job.

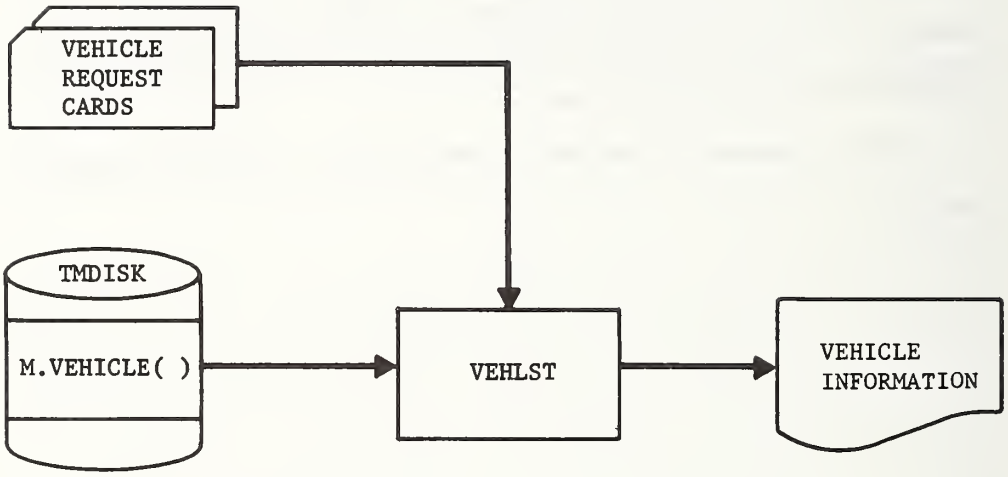


FIGURE 5.2-1
PROCEDURE VHLIST

TABLE 5.2-1

PROCEDURE SPECIFICATION

PROCEDURE NAME: VHLIST

PROGRAM EXECUTED: VEHLST - Vehicle Master File List

FUNCTIONS: To generate a listing of requested Vehicle Master File records.

PROCEDURE FLOWCHART: Figure 5.2-1

FILES:

FILE NAME	DATA SET NAME	SEC. REF.
INPUT:		
Vehicle Master File	M.VEHICLE( )	6.1
Vehicle Request Cards	SYSIN	6.23
OUTPUT:		
None.		

REPORTS:

A separate page is generated for each vehicle for which records are requested. Page heading is Bus ' '.

5.2.2 Constants Files List Procedure (SRVR62)

The Constants Files List procedure enables the user to print the records from the four system constants files in a format that facilitates the use and interpretation of the listings. A separate listing is generated for each constants file.

This procedure is executed on-demand and may be run on a stand-alone basis or as part of the basic job, SRVDLY.

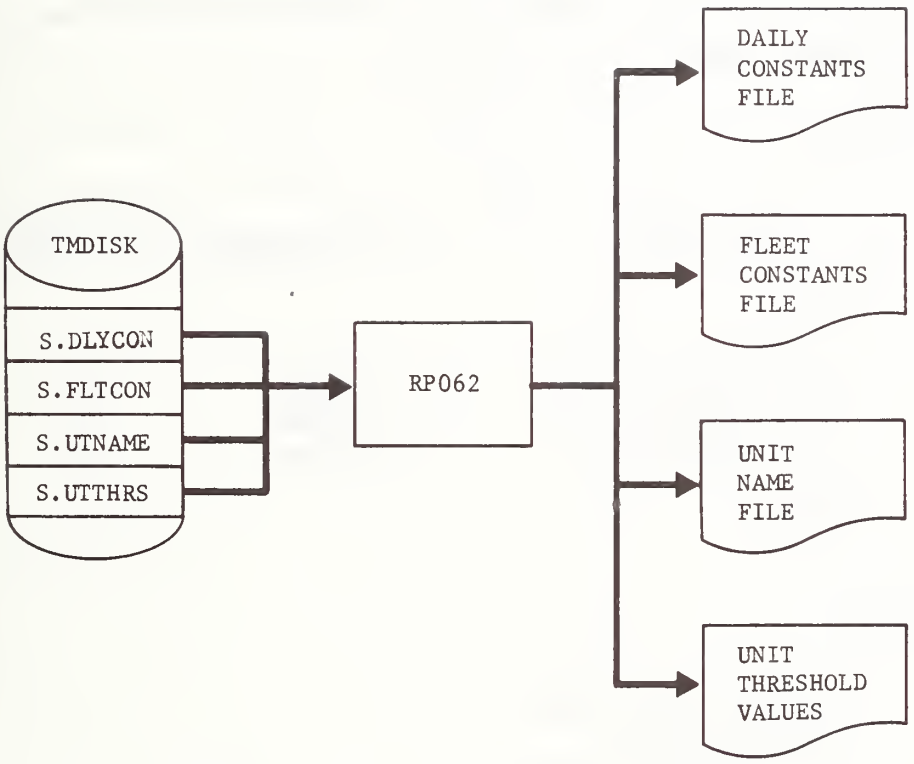


FIGURE 5.2-2
PROCEDURE SRVR62

TABLE 5.2-2

PROCEDURE SPECIFICATION

PROCEDURE NAME: SRVR62

PROGRAM EXECUTED: RP062

FUNCTIONS: To generate listings of Constants Files records.

PROCEDURE FLOWCHART: Figure 5.2-2

FILES:

FILE NAME	DATA SET NAME	SEC. REF.
INPUT:		
Daily Constants File	S.DLYCON	6.2
Fleet Constants File	S.FLTCON	6.3
Unit Name File	S.UTNAME	6.4
Unit Threshold File	S.UTTHRS	6.5
OUTPUT:		
None		

REPORTS:

Daily Constants File
Fleet Constants File
Unit Name File
Unit Threshold Values

5.2.3 Tire Mileage Report Generator Procedure (SRVTMIP)

The Tire Mileage Report Generator produces the Tire Mileage Report and monthly mileage cards for all vehicles in the system. SRVTMIP is specific to DTS and was designed to assist maintenance management in analyzing tire mileages. This report is an on-demand report and is executed on a monthly basis.

The procedure is run as a stand-alone job, usually during non-prime shift hours at the municipal computer center. It is run in this way due to the large amount of printed and punched output produced.

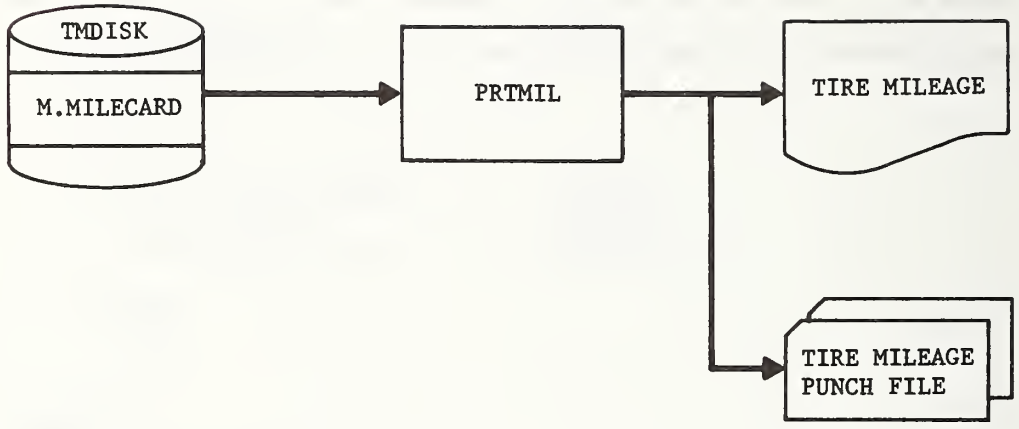


FIGURE 5.2-3
PROCEDURE SRVTMIP

TABLE 5.2-3

PROCEDURE SPECIFICATION

PROCEDURE NAME: SRVTMIP

PROGRAM EXECUTED: PRTMIL - Tire Mileage Report Generator

FUNCTIONS: To generate Tire Mileage Report and to punch a card for each report detail line printed.

PROCEDURE FLOWCHART: Figure 5.2-3

FILES:

FILE NAME	DATA SET NAME	SEC. REF.
INPUT:		
Monthly Tire Mileage File	M.MILECARD	6.20
OUTPUT:		
Tire Mileage Punch File	Card Punch	6.21

REPORTS:

Tire Mileage

5.2.4 S/U Disk Backup Procedure (SRVBKUP)

The Disk Backup procedure is used at DTS to dump the contents of the S/U System disk to magnetic tape. The backup process insures an accurate starting point for recovery procedures in the event of a system abend.

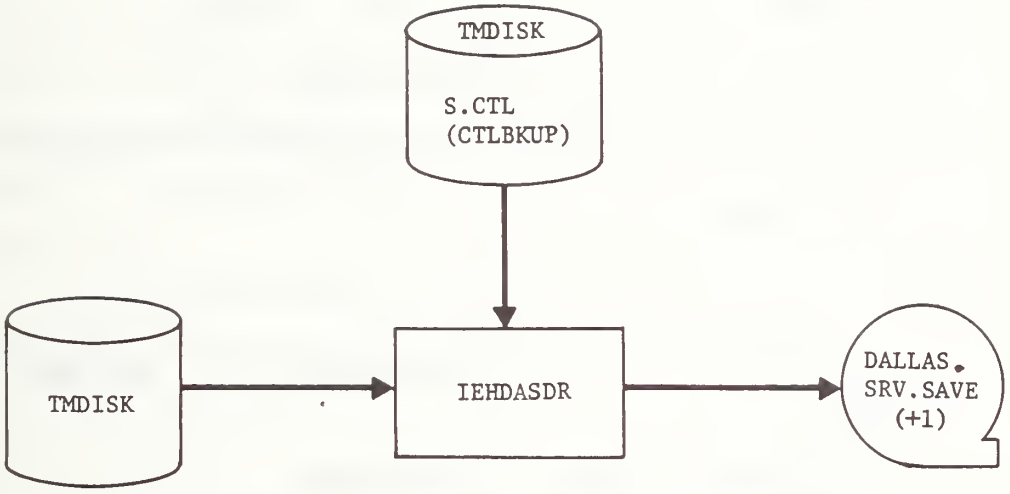


FIGURE 5.2-4
PROCEDURE SRVBKUP

TABLE 5.2-4

PROCEDURE SPECIFICATION

PROCEDURE NAME: SRVBKUP

PROGRAM EXECUTED: IEHDASDR - Disk Save Utility

FUNCTIONS: To dump the contents of the S/U System disk to magnetic tape.

PROCEDURE FLOWCHART: Figure 5.2-4

FILES:

FILE NAME	DATA SET NAME	SEC. REF.
INPUT:		
Service System Control File	S.CTL(CTLBKUP)	6.14
S/U System Disk	TMDISK	
OUTPUT:		
Tape Copy of TMDISK	DALLAS.SRV.SAVE(+1)	

REPORTS:

None.

5.2.5 Daily Report Generator Procedure (SRVRDLY)

The Daily Report Generator procedure may be used to generate the regular daily reports. This is done if a system abend in job SRVDLY causes the reports to be lost. SRVRDLY will only be used if the abend occurs in procedure SRVU01 after the Vehicle Master File has been updated. The updating is done by program DG700 in step SRVØ5 of procedure SRVUØ1.

A detailed description of the use of procedure SRVRDLY is provided in the SIMS Service/Unit Change System Operating Instructions.

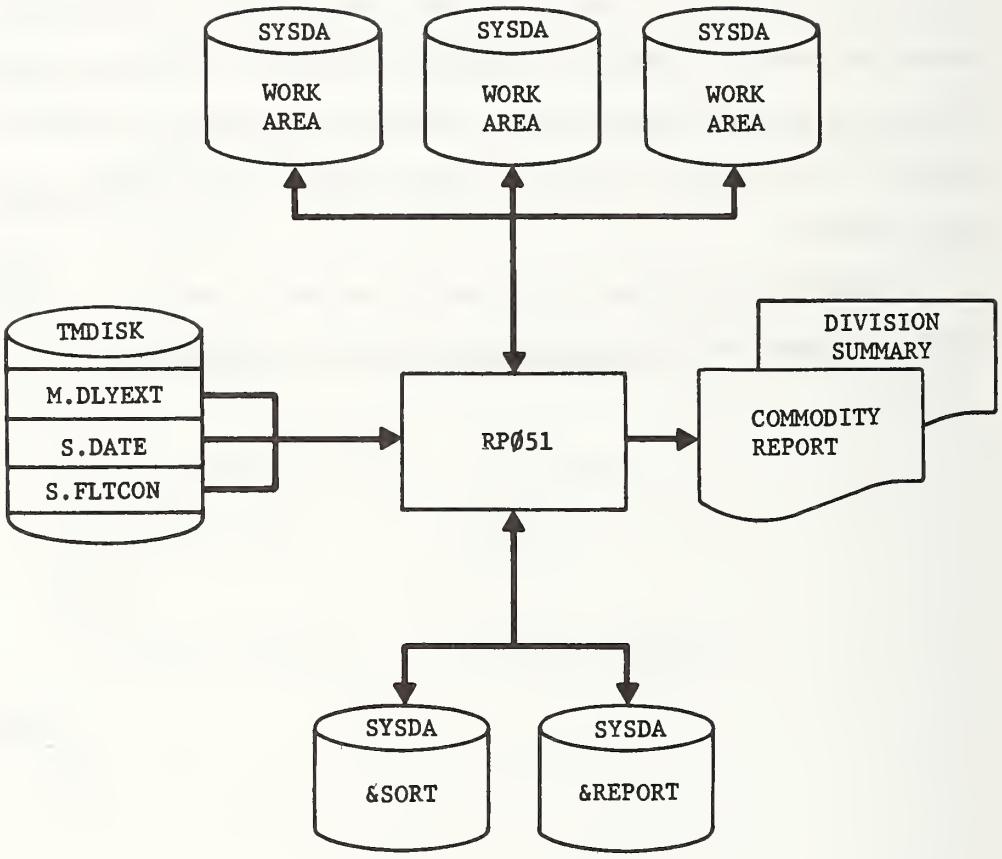


FIGURE 5.2-5
PROCEDURE SRVRDLY-SRV51

TABLE 5.2-5

PROCEDURE SPECIFICATION

PROCEDURE NAME: SRVRDLY - SRV51

PROGRAMS EXECUTED: RP051 - Commodity Report Generator

FUNCTIONS: To produce the Daily Commodities Report (see note). This procedure is used in the event of an abend of the S/U System.

PROCEDURE FLOWCHART: Figure 5.2-5

FILES:

FILE NAME	DATA SET NAME	SEC. REF.
INPUT:		
Daily Extract File	M.DLYEXT	6.9
Request Date File	S.DATE	6.13
Fleet Constants File	S.FLTCON	6.3
OUTPUT:		
None.		

REPORTS:

Commodity Report
Division Summary

NOTE: The reporting of inspections performed is an option available to the user.

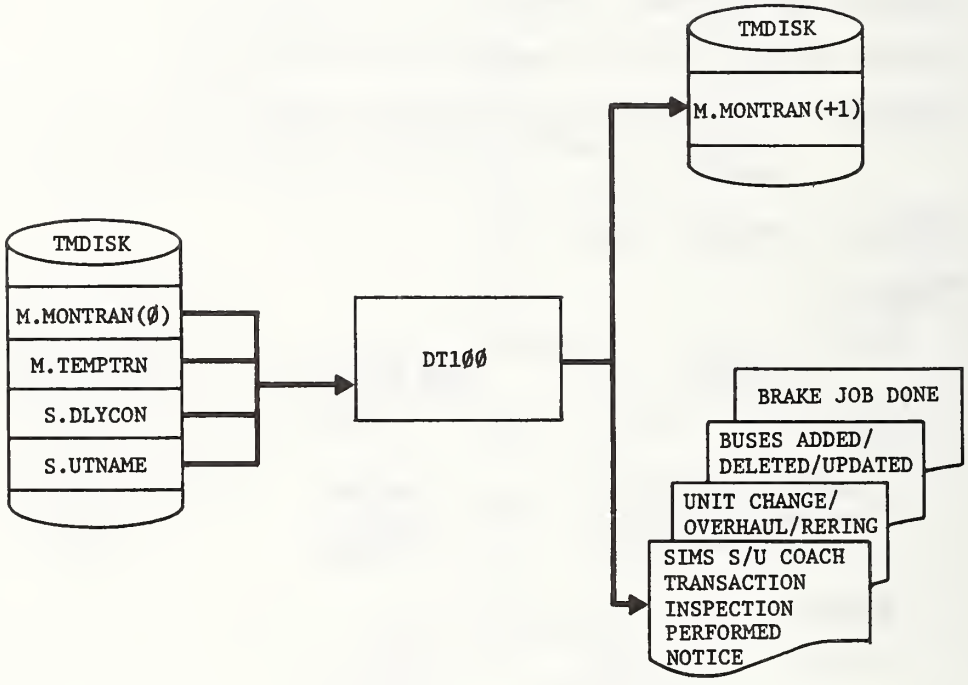


FIGURE 5.2-6
PROCEDURE SRVRDLY-SRV52

TABLE 5.2-6

PROCEDURE SPECIFICATION

PROCEDURE NAME: SRVRDLY - SRV52

PROGRAM EXECUTED: DT100 - Transaction Disk File Update

FUNCTIONS: To update Monthly Transaction File and generate daily reports of selected types of transactions processed. This procedure is used in the event of an abend of the S/U System.

PROCEDURE FLOWCHART: Figure 5.2-6

FILES:

FILE NAME	DATA SET NAME	SEC. REF.
INPUT:		
Monthly Transaction File	M.MONTRAN(0)	6.11
Temporary Transaction File	M.TEMPTRN	6.10
Daily Constants File	S.DLYCON	6.2
Unit Name File	S.UTNAME	6.4
OUTPUT:		
Monthly Transaction File	M.MONTRAN(+1)	6.11

REPORTS:

SIMS S/U Coach Transactions:

1. Inspection Performed Notice
2. Unit Changed/Rering/Overhaul
3. Buses Added/Deleted/Updated
4. Brake Job Done

5.3 Cataloged Procedures

This section contains listings of the S/U System procedures. These listings are illustrative only. The majority of the ones displayed were installed at ACTD. The comparable procedures installed at DTS are similar. Other listings displayed are of procedures installed at DTS, but which were not installed at ACTD. Table 5.3-1 lists each procedure name, the property at which it has been installed, and corresponding figure numbers for the JCL listings.

TABLE 5.3-1

CATALOGED PROCEDURES

Procedure Name	Installed At	JCL Listing Figure
SIMAPUT1	DTS	5.3-1
SIMAPUT2	DTS	5.3-2
SIMAPUT3	DTS	5.3-3
SIMAPUT4	DTS	5.3-4
SIMAPUT5	DTS	5.3-5
SRVTØ1	DTS	5.3-6
SRVTØ3	ACTD	5.3-7
SRVDATE	ACTD	5.3-8
SRVUØ1	ACTD	5.3-9
SRVR53	ACTD	5.3-10
SRVR54	ACTD	5.3-11
SRVR55	ACTD	5.3-12
SRVR56	DTS	5.3-13
SRVR59 (RP059A)	ACTD	5.3-14
SRVR59 (RP059B)	ACTD	5.3-15
SRVR66	DTS	5.3-16
SRVUTR	ACTD	5.3-17
SRVR58	ACTD	5.3-18
SRVR64	ACTD	5.3-19
SRVR57	DTS	5.3-20
VHLIST	ACTD	5.3-21
SRVR62	ACTD	5.3-22

TABLE 5.3-1 (Conclusion)

CATALOGED PROCEDURES

Procedure Name	Installed At	JCL Listing Figure
SRVTMIP	DTS	5.3-23
SRVBKUP	DTS	5.3-24
SRVRDLY	ACTD	5.3-25

```
//* CTL CN=DALLAS TRANSIT,JDATE=73200
//SIMAPUT1  PROC DSK='TMDISK'
//STEP1 EXEC PGM=IEBGENER,REGION=100K
//SYSPRINT DD DUMMY
//SYSIN DD  DUMMY
//SYSUT1 DD DSN=MAGTAPE,LABEL=(,BLP),UNIT=2400,VOL=SER=DATA01,
//      DISP=(NEW,KEEP,KEEP),
//        DCB=(RECFM=F,LRECL=80,BLKSIZE=80,TRTCH=T,DEN=2,BUFNO=8)
//SYSUT2   DD  DSN=DAILYTRN,DISP=(OLD,PASS),UNIT=2314,
//      VOL=(PRIVATE,RETAIN,SER=&DSK)
```

FIGURE 5.3-1
PROCEDURE SIMAPUT1

```
//* CTL CN=DALLAS TRANSIT,JDATE=73200
//SIMAPUT2  PROC DSK='TMDISK'
//STEP1 EXEC PGM=IEBGENER,REGION=100K
//SYSPRINT DD DUMMY
//SYSIN DD  DUMMY
//SYSUT1 DD DSN=MAGTAPE,LABEL=(,BLP),UNIT=2400,VOL=SER=DATA01,
//      DISP=(NEW,KEEP,KEEP),
//        DCB=(RECFM=F,LRECL=80,BLKSIZE=80,TRTCH=T,DEN=2,BUFNO=8)
//SYSUT2   DD  DSN=DAILYTRN,DISP=(OLD,PASS),UNIT=2314,
//      VOL=(PRIVATE,RETAIN,SER=&DSK)
//STEP2 EXEC PGM=IEBGENER,REGION=100K
//SYSPRINT DD DUMMY
//SYSIN DD  DUMMY
//SYSUT1 DD DSN=MAGTAPE,LABEL=(,BLP),UNIT=2400,VOL=SER=DATA02,
//      DISP=(NEW,KEEP,KEEP),
//        DCB=(RECFM=F,LRECL=80,BLKSIZE=80,TRTCH=T,DEN=2,BUFNO=8)
//SYSUT2   DD  DSN=DAILYTRN,DISP=(MOD,PASS,KEEP),UNIT=2314,
//      VOL=(PRIVATE,RETAIN,SER=&DSK)
```

FIGURE 5.3-2
PROCEDURE SIMAPUT2

```
//* CTL CN=DALLAS TRANSIT,JDATE=73200
//SIMAPUT3  PROC DSK='TMDISK'
//STEP1 EXEC PGM=IEBGENER,REGION=100K
//SYSPRINT DD DUMMY
//SYSIN DD  DUMMY
//SYSUT1 DD DSN=MAGTAPE,LABEL=(,BLP),UNIT=2400,VOL=SER=DATA01,
//      DISP=(NEW,KEEP,KEEP),
//         DCB=(RECFM=F,LRECL=80,BLKSIZE=80,TRTCH=T,DEN=2,BUFNO=8)
//SYSUT2   DD  DSN=DAILYTRN,DISP=(OLD,PASS),UNIT=2314,
//      VOL=(PRIVATE,RETAIN,SER=&DSK)
//STEP2 EXEC PGM=IEBGENER,REGION=100K
//SYSPRINT DD DUMMY
//SYSIN DD  DUMMY
//SYSUT1 DD DSN=MAGTAPE,LABEL=(,BLP),UNIT=2400,VOL=SER=DATA02,
//      DISP=(NEW,KEEP,KEEP),
//         DCB=(RECFM=F,LRECL=80,BLKSIZE=80,TRTCH=T,DEN=2,BUFNO=8)
//SYSUT2   DD  DSN=DAILYTRN,DISP=(MOD,PASS,KEEP),UNIT=2314,
//      VOL=(PRIVATE,RETAIN,SER=&DSK)
//STEP3 EXEC PGM=IEBGENER,REGION=100K
//SYSPRINT DD DUMMY
//SYSIN DD  DUMMY
//SYSUT1 DD DSN=MAGTAPE,LABEL=(,BLP),UNIT=2400,VOL=SER=DATA03,
//      DISP=(NEW,KEEP,KEEP),
//         DCB=(RECFM=F,LRECL=80,BLKSIZE=80,TRTCH=T,DEN=2,BUFNO=8)
//SYSUT2   DD  DSN=DAILYTRN,DISP=(MOD,PASS,KEEP),UNIT=2314,
//      VOL=(PRIVATE,RETAIN,SER=&DSK)
```

FIGURE 5.3-3
PROCEDURE SIMAPUT3

```
//* CTL CN=DALLAS TRANSIT,JDATE=73200
//SIMAPUT4  PROC DSK='TMDISK'
//STEP1 EXEC PGM=IEBGENER,REGION=100K
//SYSPRINT DD DUMMY
//SYSIN DD  DUMMY
//SYSUT1 DD DSN=MAGTAPE,LABEL=(,BLP),UNIT=2400,VOL=SER=DATA01,
//      DISP=(NEW,KEEP,KEEP),
//        DCB=(RECFM=F,LRECL=80,BLKSIZE=80,TRTCH=T,DEN=2,BUFNO=8)
//SYSUT2   DD  DSN=DAILYTRN,DISP=(OLD,PASS),UNIT=2314,
//      VOL=(PRIVATE,RETAIN,SER=&DSK)
//STEP2 EXEC PGM=IEBGENER,REGION=100K
//SYSPRINT DD DUMMY
//SYSIN DD  DUMMY
//SYSUT1 DD DSN=MAGTAPE,LABEL=(,BLP),UNIT=2400,VOL=SER=DATA02,
//      DISP=(NEW,KEEP,KEEP),
//        DCB=(RECFM=F,LRECL=80,BLKSIZE=80,TRTCH=T,DEN=2,BUFNO=8)
//SYSUT2   DD  DSN=DAILYTRN,DISP=(MOD,PASS,KEEP),UNIT=2314,
//      VOL=(PRIVATE,RETAIN,SER=&DSK)
//STEP3 EXEC PGM=IEBGENER,REGION=100K
//SYSPRINT DD DUMMY
//SYSIN DD  DUMMY
//SYSUT1 DD DSN=MAGTAPE,LABEL=(,BLP),UNIT=2400,VOL=SER=DATA03,
//      DISP=(NEW,KEEP,KEEP),
//        DCB=(RECFM=F,LRECL=80,BLKSIZE=80,TRTCH=T,DEN=2,BUFNO=8)
//SYSUT2   DD  DSN=DAILYTRN,DISP=(MOD,PASS,KEEP),UNIT=2314,
//      VOL=(PRIVATE,RETAIN,SER=&DSK)
//STEP4 EXEC PGM=IEBGENER,REGION=100K
//SYSPRINT DD DUMMY
//SYSIN DD  DUMMY
//SYSUT1 DD DSN=MAGTAPE,LABEL=(,BLP),UNIT=2400,VOL=SER=DATA04,
//      DISP=(NEW,KEEP,KEEP),
//        DCB=(RECFM=F,LRECL=80,BLKSIZE=80,TRTCH=T,DEN=2,BUFNO=8)
//SYSUT2   DD  DSN=DAILYTRN,DISP=(MOD,PASS,KEEP),UNIT=2314,
//      VOL=(PRIVATE,RETAIN,SER=&DSK)
```

FIGURE 5.3-4
PROCEDURE SIMAPUT4

```
//* CTL CN=DALLAS TRANSIT,JDATE=73200
//SIMAPUT5  PROC DSK='TMDISK'
//STEP1 EXEC PGM=IEBGENER,REGION=100K
//SYSPRINT DD DUMMY
//SYSIN DD  DUMMY
//SYSUT1 DD DSN=MAGTAPE,LABEL=(,BLP),UNIT=2400,VOL=SER=DATA01,
//      DISP=(NEW,KEEP,KEEP),
//         DCB=(RECFM=F,LRECL=80,BLKSIZE=80,TRTCH=T,DEN=2,BUFNO=8)
//SYSUT2   DD  DSN=DAILYTRN,DISP=(OLD,PASS),UNIT=2314,
//      VOL=(PRIVATE,RETAIN,SER=&DSK)
//STEP2 EXEC PGM=IEBGENER,REGION=100K
//SYSPRINT DD DUMMY
//SYSIN DD  DUMMY
//SYSUT1 DD DSN=MAGTAPE,LABEL=(,BLP),UNIT=2400,VOL=SER=DATA02,
//      DISP=(NEW,KEEP,KEEP),
//         DCB=(RECFM=F,LRECL=80,BLKSIZE=80,TRTCH=T,DEN=2,BUFNO=8)
//SYSUT2   DD  DSN=DAILYTRN,DISP=(MOD,PASS,KEEP),UNIT=2314,
//      VOL=(PRIVATE,RETAIN,SER=&DSK)
//STEP3 EXEC PGM=IEBGENER,REGION=100K
//SYSPRINT DD DUMMY
//SYSIN DD  DUMMY
//SYSUT1 DD DSN=MAGTAPE,LABEL=(,BLP),UNIT=2400,VOL=SER=DATA03,
//      DISP=(NEW,KEEP,KEEP),
//         DCB=(RECFM=F,LRECL=80,BLKSIZE=80,TRTCH=T,DEN=2,BUFNO=8)
//SYSUT2   DD  DSN=DAILYTRN,DISP=(MOD,PASS,KEEP),UNIT=2314,
//      VOL=(PRIVATE,RETAIN,SER=&DSK)
//STEP4 EXEC PGM=IEBGENER,REGION=100K
//SYSPRINT DD DUMMY
//SYSIN DD  DUMMY
//SYSUT1 DD DSN=MAGTAPE,LABEL=(,BLP),UNIT=2400,VOL=SER=DATA04,
//      DISP=(NEW,KEEP,KEEP),
//         DCB=(RECFM=F,LRECL=80,BLKSIZE=80,TRTCH=T,DEN=2,BUFNO=8)
//SYSUT2   DD  DSN=DAILYTRN,DISP=(MOD,PASS,KEEP),UNIT=2314,
//      VOL=(PRIVATE,RETAIN,SER=&DSK)
//STEP5 EXEC PGM=IEBGENER,REGION=100K
//SYSPRINT DD DUMMY
//SYSIN DD  DUMMY
//SYSUT1 DD DSN=MAGTAPE,LABEL=(,BLP),UNIT=2400,VOL=SER=DATA05,
//      DISP=(NEW,KEEP,KEEP),
//         DCB=(RECFM=F,LRECL=80,BLKSIZE=80,TRTCH=T,DEN=2,BUFNO=8)
//SYSUT2   DD  DSN=DAILYTRN,DISP=(MOD,PASS,KEEP),UNIT=2314,
//      VOL=(PRIVATE,RETAIN,SER=&DSK)
```

FIGURE 5.3-5
PROCEDURE SIMAPUT5

```
//* CTL CN=DALLAS TRANSIT,JDATE=73200
//SRVT01   PROC ACNT='CN1510.SRV',DSK='TMDISK'
//SRVT01 EXEC PGM=DTTAPEB,COND=(7,LE),REGION=100K,
//   PARM='         DALLAS TRANSIT          '
//STEPLIB  DD DSN=&ACNT..LOAD,DISP=SHR,VOL=(PRIVATE,RETAIN)
//SYSUDUMP DD SYSOUT=A
//PRINT01  DD SYSOUT=A,DCB=(RECFM=FB,LRECL=121,BLKSIZE=1210)
//ITRAN02  DD    DSN=DAILYTRN,DISP=(OLD,KEEP),UNIT=2314,
//      VOL=(PRIVATE,RETAIN,SER=&DSK)
//OTRAN03 DD DSN=&ACNT..M.TRTAPE,DISP=OLD,VOL=PRIVATE
//CNTRL04  DD DSN=&ACNT..S.DTPARM,DISP=OLD,VOL=PRIVATE
//PRINT05  DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=1330)
//PRINT06  DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=1330)
```

FIGURE 5.3-6
PROCEDURE SRVT01

```
//* CTL CN=1510,JDATE=74091
//SRVT03    PROC ACNT='CN1510.SRV'
//SRVT03  EXEC PGM=ACTAPE,REGION=40K,
//       PARM='          AC TRANSIT          '
//STEPLIB DD DSN=&ACNT..LOAD,DISP=OLD,VOL=PRIVATE
//ITRAN01    DD DSN=DATA,UNIT=2400-2,VOL=SER=ACFLUX,DISP=OLD,
//    LABEL=(,BLP),DCB=(RECFM=F,LRECL=80,BLKSIZE=80,TRTCH=ET,DEN=0,
//      BUFNO=8)
//OTRAN02  DD DSN=&ACNT..M.TRTAPE,DISP=OLD,VOL=PRIVATE
//PRINT03    DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=2660)
//PRINT04    DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=2660)
//SYSUDUMP    DD SYSOUT=A
```

FIGURE 5.3-7
PROCEDURE SRVT03

```
//* CTL CN=1510,JDATE=74091
//SRVDATE  PROC ACNT='CN1510.SRV'
//SRVDATE EXEC PGM=IEBGENER,COND=(7,LE),REGION=40K
//SYSPRINT DD DUMMY
//SYSUT1 DD DDNAME=DATECD
//SYSUT2 DD DSN=&ACNT..S.LATE,DISP=OLD,VOL=PRIVATE
//SYSIN DD DSN=&ACNT..S.CTL(CTLDATE),DISP=OLD,VOL=(PRIVATE,RETAIN)
```

FIGURE 5.3-8
PROCEDURE SRVDATE

```
//* CTL CN=1510,JDATE=74091
//SRVU01  PROC ACNT='CN1510.SRV',DSK='TMDISK'
//SRV01   EXEC PGM=DA600A,COND=(7,LE),REGION=124K,
//       PARM='           AC TRANSIT          '
//STEPLIB DD DSN=&ACNT..LOAD,DISP=OLD,VOL=PRIVATE
//SYSUDUMP DD SYSOUT=A
//ITRAN01 DD DSN=&ACNT..M.TRTAPE,DISP=OLD,VOL=PRIVATE
//OTRAN02    DD DSN=&ACNT..M.TRANS,DISP=OLD,VOL=PRIVATE
//CONST03 DD DSN=&ACNT..S.DLYCON,DISP=OLD,VOL=(PRIVATE,SER=&DSK),
//    UNIT=2314
//CONST04 DD DSN=&ACNT..S.FLTCON,DISP=OLD,VOL=PRIVATE
//CONST05 DD DSN=&ACNT..S.UTNAME,DISP=OLD,VOL=PRIVATE
//CONST06 DD DSN=&ACNT..S.LTTHRS,DISP=OLD,VOL=PRIVATE
//PRINT07    DD SYSOUT=A,DCB=(RECFM=F,LRECL=133,BLKSIZE=2660)
//PRINT08    DD SYSOUT=A,DCB=(RECFM=F,LRECL=133,BLKSIZE=2660)
//PRINT09    DD SYSOUT=A,DCB=(RECFM=F,LRECL=133,BLKSIZE=2660)
//WORK12     DD DSN=&CONSTS,DISP=(NEW,DELETE),UNIT=2314,
//     SPACE=(CYL,(1,1),,CONTIG),
//   DCB=(RECFM=FB,LRECL=88,BLKSIZE=880)
//ITRAN11       DD DDNAME=TRANCD
//SRV03 EXEC PGM=IERRCOO,COND=(7,LE),PARM='CORE=80000',REGION=108K
//SORTLIB DD DSN=SYS1.SORTLIB,DISP=SHR
//SYSOUT  DD SYSOUT=A
//SORTIN DD DSN=&ACNT..M.TRANS,DISP=OLD,VOL=PRIVATE
//SORTWK01 DD UNIT=2314,SPACE=(CYL,(3,1),,CONTIG)
//SORTWK02 DD UNIT=2314,SPACE=(CYL,(3,1),,CONTIG)
//SORTWK03 DD UNIT=2314,SPACE=(CYL,(3,1),,CONTIG)
//SORTOUT DD DSN=&ACNT..M.SRTRANS,DISP=OLD,VOL=PRIVATE
//SYSIN   DD DSN=&ACNT..S.CTL(CTLSRV03),DISP=OLD,VOL=(PRIVATE,RETAIN)
//SRV05  EXEC PGM=DG700A,COND=(7,LE),REGION=144K,
//       PARM='           AC TRANSIT          '
//STEPLIB DD DSN=&ACNT..LOAD,DISP=SHR,VOL=(PRIVATE,RETAIN)
//SYSUDUMP DD SYSOUT=A
//SYSOUT DD SYSOUT=A
//ITRAN01 DD DSN=&ACNT..M.SRTRANS,DISP=OLD,VOL=PRIVATE
//IMSTR02 DD DSN=&ACNT..M.VEHICLE(0),DISP=OLD,VOL=PRIVATE
//PRINT03  DD SYSOUT=A,DCB=(RECFM=F,LRECL=133,BLKSIZE=2660)
//DATE04  DD DSN=&ACNT..S.DATE,DISP=OLD,VOL=PRIVATE
//OMSTR11 DD DSN=&ACNT..M.VEHICLE(+1),DISP=(NEW,CATLG,DELETE),
//    UNIT=2314,VOL=(PRIVATE,SER=&DSK),SPACE=(TRK,(300,50),RLSE),
//    DCB=(RECFM=FB,LRECL=30,BLKSIZE=7260)
//OTRAN11  DD DSN=&ACNT..M.TEMPTRN,DISP=OLD,VOL=PRIVATE,DCB=BUFNO=1
//OMSTR12 DD DSN=&ACNT..M.DLYEXT,DISP=OLD,VOL=PRIVATE
```

FIGURE 5.3-9
PROCEDURE SRVU01

```
//CONST15 DD DSN=&ACNT..S.DLYCON,DISP=OLD,VOL=PRIVATE
//CONST16 DD DSN=&ACNT..S.UTNAME,DISP=OLD,VOL=PRIVATE
//CONST17 DD DSN=&ACNT..S.FLTCON,DISP=OLD,VOL=PRIVATE
//SRV09   EXEC  PGM=RP051A,COND=(7,LE),REGION=116K,
//       PARM='           AC TRANSIT          '
//STEPLIB DD DSN=&ACNT..LOAD,DISP=OLD,VOL=PRIVATE
//SORTLIB  DD  DSN=SYS1.SORTLIB,DISP=SHR
//SYSOUT   DD DUMMY
//SORTWK01   DD UNIT=2314,SPACE=(CYL,(1,1),,CONTIG)
//SORTWK02   DD UNIT=2314,SPACE=(CYL,(1,1),,CONTIG)
//SORTWK03   DD UNIT=2314,SPACE=(CYL,(1,1),,CONTIG)
//SYSUDUMP   DD  SYSOUT=A
//PRINT01   DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=7182)
//IMSTR02   DD DSN=&ACNT..M.DLYEXT,DISP=OLD,VOL=PRIVATE
//DATE03   DD DSN=&ACNT..S.DATE,DISP=OLD,VOL=PRIVATE
//CONST04   DD DSN=&ACNT..S.FLTCON,DISP=OLD,VOL=PRIVATE
//ERR05   DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=1330)
//WORK06   DD DSN=&SORT,UNIT=2314,DISP=(NEW,DELETE),
//      SPACE=(CYL,(5,1),,CONTIG),DCB=(RECFM=FB,LRECL=49,BLKSIZE=7252)
//WORK07   DD DSN=&REPORT,UNIT=2314,DISP=(NEW,DELETE),
//      SPACE=(CYL,(5,1),,CONTIG),DCB=(RECFM=FB,LRECL=49,BLKSIZE=7252)
//SRV11    EXEC  PGM=DT10CA,COND=(7,LE),REGION=82K,
//       PARM='           AC TRANSIT          '
//STEPLIB  DD DSN=&ACNT..LOAD,DISP=OLD,VOL=PRIVATE
//SYSUDUMP   DD  SYSOUT=A
//PRINT1    DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=133)
//PRINT2    DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=7182)
//PRINT3    DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=1330)
//PRINT4    DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=1330)
//PRINT5    DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=1330)
//CONST05   DD DSN=&ACNT..S.DLYCON,DISP=OLD,VOL=PRIVATE
//CONST06   DD DSN=&ACNT..S.UTNAME,DISP=OLD,VOL=PRIVATE
//ITRAN10   DD DSN=&ACNT..M.TEMPTRN,DISP=OLD,VOL=PRIVATE
//ITRAN11   DD DSN=&ACNT..M.MONTRAN(0),DISP=OLD,VOL=PRIVATE
//OTRAN12   DD DSN=&ACNT..M.MONTRAN(+1),DISP=(NEW,CATLG,DELETE),
//      UNIT=2314,VOL=(PRIVATE,SER=&DSK),
//      DCB=(RECFM=FB,LRECL=46,BLKSIZE=7268),SPACE=(TRK,(100,20),RLSE)
```

FIGURE 5.3-9 (CONCLUDED)
PROCEDURE SRVU01

```
//* CTL CN=1510,JDATE=74091
//SRVR53 PROC ACNT='CN151C.SRV',VERS='+1'
//SRVR53  EXEC PGM=RP053B,COND=(7,LE),REGION=116K,
//       PARM='           AC TRANSIT          '
//STEPLIB  DD DSN=&ACNT..LOAD,VOL=PRIVATE,DISP=SHR
//SORTLIB  DD DSN=SYS1.SORTLIB,DISP=SHR
//SYSOUT  DD DUMMY
//SYSUDUMP  DD SYSOUT=A
//PRINT01  DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=7182)
//DATE03  DD DSN=&ACNT..S.DATE,DISP=SHR,VOL=PRIVATE
//IMSTR02  DD DSN=&ACNT..M.VEHICLE(&VERS.),DISP=SHR,VOL=PRIVATE
//SORTWK01  DD UNIT=2314,SPACE=(CYL,(5,1),,CONTIG)
//SORTWK02  DD UNIT=2314,SPACE=(CYL,(5,1),,CONTIG)
//SORTWK03  DD UNIT=2314,SPACE=(CYL,(5,1),,CONTIG)
//ERR05  DD SYSOUT=A,DCB=(RECFM=F,LRECL=133,BLKSIZE=133)
//WORK06  DD DSN=&SORT,UNIT=2314,DISP=(NEW,DELETE),
//  SPACE=(CYL,(5,1),,CONTIG),DCB=(RECFM=FB,LRECL=274,BLKSIZE=7124)
//WORK07  DD DSN=&REPORT,UNIT=2314,DISP=(NEW,DELETE),
//  SPACE=(CYL,(5,1),,CONTIG),
//  DCB=(RECFM=FB,LRECL=274,BLKSIZE=7124)
//CONST08  DD DSN=&ACNT..S.FLTCON,DISP=SHR,VOL=PRIVATE
```

FIGURE 5.3-10
PROCEDURE SRVR53

```
//* CTL CN=1510,JDATE=74091
//SRVR54   PROC ACNT='CN1510.SRV',VERS='+1'
//SRVR54   EXEC PGM=RP054A,COND=(7,LE),REGION=124K,
//      PARM='          AC TRANSIT          '
//STEPLIB  DD DSN=&ACNT..LOAD,DISP=OLD,VOL=PRIVATE
//SORTLIB  DD DSN=SYS1.SCRTLIB,DISP=SHR
//SYSOUT   DD DUMMY
//SYSUDUMP DD SYSOUT=A
//SORTWK01 DD UNIT=2314,SPACE=(CYL,(1,1),,CONTIG)
//SORTWK02 DD UNIT=2314,SPACE=(CYL,(1,1),,CONTIG)
//SORTWK03 DD UNIT=2314,SPACE=(CYL,(1,1),,CONTIG)
//ERR01    DD  SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=1330)
//PRINT01  DD  SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=1330)
//IMSTR02  DD DSN=&ACNT..M.VEHICLE(&VERS.),DISP=OLD,VOL=PRIVATE
//DATE03   DD DSN=&ACNT..S.DATE,DISP=OLD,VOL=PRIVATE
//CONST04  DD DSN=&ACNT..S.FLTCON,DISP=OLD,VOL=PRIVATE
//CONST05  DD DSN=&ACNT..S.DLYCON,DISP=OLD,VOL=PRIVATE
//WORK05   DD DSN=&REPORT,UNIT=2314,DISP=(NEW,DELETE),
//      SPACE=(CYL,(1,1),,CONTIG),DCB=(RECFM=FB,LRECL=84,BLKSIZE=7224)
//WORK06   DD DSN=&SORT,UNIT=2314,DISP=(NEW,DELETE),
//      SPACE=(CYL,(1,1),,CONTIG),DCB=(RECFM=FB,LRECL=84,BLKSIZE=7224)
//WORK07   DD DSN=&WORKEM,UNIT=2314,DISP=(NEW,PASS),
//      SPACE=(CYL,(1,1),,CONTIG),DCB=(RECFM=FB,LRECL=84,BLKSIZE=7224)
```

FIGURE 5.3-11
PROCEDURE SRVR54

```
//* CTL CN=1510,JDATE=74051
//SRVR55   PROC ACNT='CN1510.SRV',VERS='+1'
//SRVR55 EXEC PGM=RP055A,REGION=126K,COND=(7,LE),
//       PARM='           AC TRANSIT          '
//STEPLIB DD DSN=&ACNT..LOAD,DISP=OLD,VOL=PRIVATE
//SORTLIB  DD DSN=SYS1.SORTLIB,DISP=SHR
//SYSOUT   DD DUMMY
//SYSUDUMP DD SYSOUT=A
//SORTWK01 DD UNIT=2314,SPACE=(CYL,(2,1),,CONTIG)
//SORTWK02 DD UNIT=2314,SPACE=(CYL,(2,1),,CONTIG)
//SORTWK03 DD UNIT=2314,SPACE=(CYL,(2,1),,CONTIG)
//IMSTR01  DD DSN=&ACNT..M.VEHICLE(&VERS),DISP=OLD,VOL=PRIVATE
//DATE02   DD DSN=&ACNT..S.DATE,DISP=OLD,VOL=PRIVATE
//PRINT03  DD SYSOUT=A,DCB=(LRECL=133,BLKSIZE=7182,RECFM=FB)
//CONST03  DD DSN=&ACNT..S.UTNAME,DISP=OLD,VOL=PRIVATE
//CONST04  DD DSN=&ACNT..S.UTTHRS,DISP=OLD,VOL=PRIVATE
//WORK06   DD DSN=&SORT,UNIT=2314,DISP=(NEW,DELETE),
//    SPACE=(CYL,(2,1),,CONTIG),
//  DCB=(RECFM=FB,LRECL=18,BLKSIZE=7272)
//WORK07   DD DSN=&REPORT,UNIT=2314,DISP=(NEW,DELETE),
//    SPACE=(CYL,(2,1),,CONTIG),
//  DCB=(RECFM=FB,LRECL=18,BLKSIZE=7272)
```

FIGURE 5.3-12
PROCEDURE SRVR55

```
//* CTL CN=DALLAS TRANSIT,JDATE=73200
//SRVR56   PROC ACNT='CN1510.SRV',VERS='+1'
//SRVR56 EXEC PGM=RP056A,REGION=44K,COND=(7,LE),
//        PARM='         DALLAS TRANSIT          '
//STEPLIB DD DSN=&ACNT..LOAD,DISP=OLD,VOL=PRIVATE
//SYSUDUMP DD SYSOUT=A
//IMSTR01  DD DSN=&ACNT..M.VEHICLE(&VERS.),DISP=OLD,VOL=PRIVATE
//CONST02  DD DSN=&ACNT..S.FLTCON,DISP=OLD,VOL=PRIVATE
//CONST04  DD DSN=&ACNT..S.UTTHRS,DISP=OLD,VOL=PRIVATE
//DATE02   DD DSN=&ACNT..S.DATE,DISP=OLD,VOL=PRIVATE
//PRINT03  DD SYSOUT=A,DCB=(LRECL=133,BLKSIZE=1330,RECFM=FB)
```

FIGURE 5.3-13
PROCEDURE SRVR56

```
//* CTL CN=CN1510,JDATE=73239
//SRVR59   PROC ACNT='CN1510.SRV',VERS='+1'
//SRVR59 EXEC PGM=RP059A,REGION=120K,COND=(7,LE),
//       PARM='          A C  TRANSIT       '
//STEPLIB DD DSN=&ACNT..LOAD,DISP=OLD,VOL=PRIVATE
//SORTLIB  DD DSN=SYS1.SORTLIB,DISP=SHR
//SYSUDUMP    DD SYSOUT=A
//SYSOUT   DD SYSOUT=A
//SORTWK01 DD UNIT=2314,SPACE=(CYL,(3,1),,CONTIG)
//SORTWK02 DD UNIT=2314,SPACE=(CYL,(3,1),,CONTIG)
//SORTWK03 DD UNIT=2314,SPACE=(CYL,(3,1),,CONTIG)
//PRINT02    DD SYSOUT=A,DCB=(LRECL=133,BLKSIZE=7182,RECFM=FB)
//UPRNT01    DD DUMMY,DCB=(LRECL=133,BLKSIZE=7182,RECFM=FB)
//IMSTR01  DD DSN=&ACNT..M.VEHICLE(&VERS),DISP=OLD,VOL=PRIVATE
//DATE02   DD DSN=&ACNT..S.DATE,DISP=OLD,VOL=PRIVATE
//WORK06   DD DSN=&SORT,UNIT=2314,DISP=(NEW,DELETE),
//    SPACE=(CYL,(7,1),,CONTIG),
//  DCB=(RECFM=FB,LRECL=62,BLKSIZE=7254)
//WORK07   DD DSN=&REPORT,UNIT=2314,DISP=(NEW,DELETE),
//    SPACE=(CYL,(7,1),,CONTIG),
//  DCB=(RECFM=FB,LRECL=62,BLKSIZE=7254)
```

FIGURE 5.3-14
PROCEDURE SRVR59 (RP059A)

```
//* CTL CN=1510,JDATE=74091
//SRVR59   PROC ACNT='CN1510.SRV',VERS='+1'
//SRVR59 EXEC PGM=RP059B,REGION=104K,COND=(7,LE),
//        PARM='            AC  TRANSIT        '
//STEPLIB DD DSN=&ACNT..LOAD,DISP=OLD,VOL=PRIVATE
//SORTLIB  DD DSN=SYS1.SORTLIB,DISP=SHR
//SYSUDUMP     DD SYSOUT=A
//SYSOUT   DD DUMMY
//SORTWK01 DD UNIT=SYSDA,SPACE=(CYL,(3,1),,CONTIG)
//SORTWK02 DD UNIT=SYSDA,SPACE=(CYL,(3,1),,CONTIG)
//SORTWK03 DD UNIT=SYSDA,SPACE=(CYL,(3,1),,CONTIG)
//PRINT02    DD SYSOUT=A,DCB=(LRECL=133,BLKSIZE=7182,RECFM=FB)
//IMSTR01  DD DSN=&ACNT..M.VEHICLE(&VERS),DISP=OLD,VOL=PRIVATE
//DATE02   DD DSN=&ACNT..S.DATE,DISP=OLD,VOL=PRIVATE
//WORK06    DD DSN=&SORT,UNIT=SYSDA,DISP=(NEW,DELETE),
//    SPACE=(CYL,(7,1),,CONTIG),
//     DCB=(RECFM=FB,LRECL=110,BLKSIZE=7260)
//WORK07    DD DSN=&REPORT,UNIT=SYSDA,DISP=(NEW,DELETE),
//    SPACE=(CYL,(7,1),,CONTIG),
//     DCB=(RECFM=FB,LRECL=110,BLKSIZE=7260)
```

FIGURE 5.3-15
PROCEDURE SRVR59 (RP059B)

```
//* CTL CN=DALLAS TRANSIT,JDATE=74091
//SRVR66   PROC ACNT='CN1510.SRV',VERS='+1'
//SRVR66   EXEC PGM=RP066A,COND=(7,LE),REGION=130K,
//   PARM='         DALLAS TRANSIT         '
//STEPLIB  DD DSN=&ACNT..LOAD,DISP=SHR,VOL=(PRIVATE,RETAIN)
//SYSOUT   DD DUMMY
//SYSUDUMP  DD SYSOUT=A
//SORTLIB  DD DSN=SYS1.SORTLIB,DISP=SHR
//SORTWK01  DD UNIT=SYSDA,SPACE=(CYL,(2,1),,CONTIG)
//SORTWK02  DD UNIT=SYSDA,SPACE=(CYL,(2,1),,CONTIG)
//SORTWK03  DD UNIT=SYSDA,SPACE=(CYL,(2,1),,CONTIG)
//PRINT01  DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=7182)
//IMSTR02  DD DSN=&ACNT..M.VEHICLE(&VERS.),DISP=OLD,VOL=PRIVATE
//DATE03  DD DSN=&ACNT..S.DATE,DISP=OLD,VOL=PRIVATE
//CONST05  DD DSN=&ACNT..S.DLYCON,DISP=OLD,VOL=PRIVATE
//WORK06  DD DSN=&SORT,UNIT=SYSDA,DISP=(NEW,DELETE),
//      SPACE=(CYL,(2,1),,CONTIG),DCB=(RECFM=FB,LRECL=28,BLKSIZE=7280)
//WORK07  DD DSN=&REPORT,UNIT=SYSDA,DISP=(NEW,DELETE),
//      SPACE=(CYL,(2,1),,CONTIG),DCB=(RECFM=FB,LRECL=28,BLKSIZE=7280)
```

FIGURE 5.3-16
PROCEDURE SRVR66

```
//* CTL CN=1510,JDATE=74091
//SRVUTR  PROC ACNT='CN1510.SRV',GEN='-4',VERS='+1'
//SRVUTR  EXEC PGM=DT200A,COND=(7,LE),REGION=160K
//STEPLIB DD DSN=&ACNT..LOAD,DISP=OLD,VOL=PRIVATE
//VOLREF  DD DSN=&ACNT..M.TRANTAPE(&GEN.),DISP=(OLD,PASS)
//SYSOUT DD SYSOUT=A
//SYSUDUMP DD SYSOUT=A
//SORTLIB     DD DSN=SYS1.SORTLIB,DISP=SHR
//SORTWK01     DD UNIT=2314,SPACE=(CYL,(5,1),,CONTIG)
//SORTWK02     DD UNIT=2314,SPACE=(CYL,(5,1),,CONTIG)
//SORTWK03     DD UNIT=2314,SPACE=(CYL,(5,1),,CONTIG)
//ITRAN01 DD DSN=&ACNT..M.MONTRAN(&VERS.),DISP=OLD,VOL=PRIVATE
//ITRAN02 DD DSN=&ACNT..M.TRANTAPE(0),DISP=OLD,UNIT=2400
//OTRAN03 DD DSN=&ACNT..M.TRANTAPE(+1),DISP=(NEW,CATLG,DELETE),
//      VOL=REF=*.VOLREF,
//    UNIT=2400,LABEL=(,SL),DCB=(RECFM=FB,LRECL=46,BLKSIZE=27600)
//PRINT04     DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=1330)
//WORK05     DD DSN=&SORT,UNIT=2314,DISP=(NEW,DELETE),
//  SPACE=(CYL,(5,1),,CONTIG),DCB=(RECFM=FB,LRECL=47,BLKSIZE=7238)
//WORK06     DD UNIT=2314,SPACE=(CYL,(5,1),,CONTIG),
//  DSN=&REPORT,DCB=(RECFM=FB,BLKSIZE=7238,LRECL=47)
```

FIGURE 5.3-17
PROCEDURE SRVUTR

```
//* CTL CN=1510,JDATE=74051
//SRVR58 PROC ACNT='CN1510.SRV',VERS='+1'
//SRVR58 EXEC PGM=RP058A,COND=(7,LE),REGION=160K,
//       PARM='           AC TRANSIT          '
//STEPLIB DD DSN=&ACNT..LOAD,DISP=OLD,VOL=PRIVATE
//WRK01 DD DSN=&ISORT,UNIT=SYSDA,DISP=(NEW,DELETE),
// SPACE=(CYL,(5,1),,CONTIG),DCB=(RECFM=FB,BLKSIZE=7266,LRECL=42)
//OTRANS01 DD DSN=&OSORT,UNIT=SYSDA,DISP=(NEW,DELETE),
// SPACE=(CYL,(5,1),,CONTIG),DCB=(RECFM=FB,BLKSIZE=7266,LRECL=42)
//SYSOUT DD SYSOUT=A
//SYSUDUMP DD SYSOUT=A
//SORTLIB DD DSN=SYS1.SORTLIB,DISP=SHR
//SORTWK01 DD UNIT=SYSDA,SPACE=(CYL,(5,1),,CONTIG)
//SORTWK02 DD UNIT=SYSDA,SPACE=(CYL,(5,1),,CONTIG)
//SORTWK03 DD UNIT=SYSDA,SPACE=(CYL,(5,1),,CONTIG)
//REPORT01  DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=133)
//REPORT02  DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=7182)
//REPORT03  DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=7182)
//REPORT04  DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=1330)
//UNAME01 DD DSN=&ACNT..S.UTNAME,DISP=OLD,VOL=PRIVATE
//ITRANS01 DD DSN=&ACNT..P.TRANTAPE(&VERS.),DISP=OLD,UNIT=2400
//INDATE01 DD DSN=&ACNT..S.DATE,DISP=OLD,VOL=PRIVATE
```

FIGURE 5.3-18
PROCEDURE SRVR58

```
//* CTL CN=1744,JDATE=74091
//SRVR64  PROC  ACNT='CN1510.SRV',VERS='+1',MVERS='0'
//SRVR64 EXEC PGM=RP064A,COND=(7,LE),REGION=180K,
//    PARM='          AC TRANSIT          '
//STEPLIB DD DSN=&ACNT..LOAD,DISP=SHR,VOL=(PRIVATE,RETAIN)
//SYSUDUMP DD SYSOUT=A
//SYSOUT DD DUMMY
//SORTLIB  DD DSN=SYS1.SORTLIB,DISP=SHR
//SORTWK01 DD UNIT=SYSDA,SPACE=(CYL,(5,1),,CONTIG)
//SORTWK02 DD UNIT=SYSDA,SPACE=(CYL,(5,1),,CONTIG)
//SORTWK03 DD UNIT=SYSDA,SPACE=(CYL,(5,1),,CONTIG)
//DATE02 DD DSN=&ACNT..S.DATE,DISP=OLD,VOL=PRIVATE
//CONST02    DD DSN=&ACNT..S.DLYCON,DISP=OLD,VOL=PRIVATE
//CONST04    DD DSN=&ACNT..S.UTNAME,DISP=OLD,VOL=PRIVATE
//UPRNT01    DD SYSOUT=A,DCB=(LRECL=133,BLKSIZE=1330,RECFM=FB)
//IMSTR01 DD DSN=&ACNT..M.VEHICLE(&MVERS.),DISP=OLD,VOL=PRIVATE
//TAPE04 DD DSN=&ACNT..M.TRANTAPE(&VERS.),DISP=OLD,UNIT=2400
//WORK06 DD DSN=&SORT,UNIT=SYSDA,DISP=(NEW,DELETE),
//    SPACE=(CYL,(5,1),,CONTIG),DCB=(RECFM=FB,LRECL=56,BLKSIZE=7280)
//WORK07 DD DSN=&REPORT,UNIT=SYSDA,DISP=(NEW,DELETE),
//    SPACE=(CYL,(5,1),,CONTIG),DCB=(RECFM=FB,LRECL=56,BLKSIZE=7280)
//CARD02 DD DDNAME=SYSIN
```

FIGURE 5.3-19
PROCEDURE SRVR64

```
//* CTL CN=DALLAS TRANSIT,JDATE=73200
//SRVR57   PROC ACNT='CN1510.SRV',VERS='+1'
//SRVR57   EXEC PGM=RP0578,COND=(7,LE),REGION=100K
//STEPLIB  DD DSN=&ACNT..LOAD,DISP=OLD,VOL=PRIVATE
//IMSTR02  DD DSN=&ACNT..M.VEHICLE(&VERS.),DISP=OLD,VOL=PRIVATE
//DATE03   DD DSN=&ACNT..S.DATE,DISP=OLD,VOL=PRIVATE
//MILE06   DD DSN=&ACNT..M.MILECARD,DISP=OLD,VOL=PRIVATE
//SYSOUT   DD SYSOUT=A
//SYSDUMP  DD SYSOUT=A
```

FIGURE 5.3-20
PROCEDURE SRVR57

```
//* CTL CN=1510,JDATE=74091
//VHLIST   PROC ACNT='CN1510.SRV',VERS='0'
//VHLIST   EXEC PGM=VEHLSTB,COND=(7,LE),REGION=90K
//STEPLIB DD DSN=&ACNT..LOAD,DISP=OLD,VOL=PRIVATE
//IMSTRJ1 DD DSN=&ACNT..M.VEHICLE(&VERS.),DISP=OLD,VOL=PRIVATE
//UPRNT02 DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=7182)
//SYSUDUMP DD SYSOUT=A
//ICARD03 DD DDNAME=SYSIN
```

FIGURE 5.3-21
PROCEDURE VHLIST

```
//* CTL CN=1510,JDATE=74091
//SRVR62  PROC  ACNT='CN1510.SRV'
//SRVR62 EXEC PGM=RP062A,COND=(7,LE),REGION=100K,
//    PARM='           AC TRANSIT
//STEPLIB DD DSN=&ACNT..LOAD,DISP=SHR,VOL=(PRIVATE,RETAIN)
//SYSUDUMP DD SYSOUT=A
//CONST02    DD DSN=&ACNT..S.DLYCON,DISP=OLD,VOL=PRIVATE
//CONST04    DD DSN=&ACNT..S.FLTCON,DISP=OLD,VOL=PRIVATE
//CONST06    DD DSN=&ACNT..S.UTNAME,DISP=OLD,VOL=PRIVATE
//CONST08    DD DSN=&ACNT..S.UTTHRS,DISP=OLD,VOL=PRIVATE
//PRINT03    DD SYSOUT=A,DCB=(LRECL=133,BLKSIZE=1330,RECFM=FB)
```

FIGURE 5.3-22
PROCEDURE SRVR62

```
//* CTL CN=DALLAS TRANSIT,,DATE=73200
//SRVTMIP  PROC ACNT='CN1510.SRV'
//SRVTMIP  EXEC PGM=PRTMIL,COND=(7,LE),REGION=100K
//STEPLIB  DD DSN=&ACNT..LOAD,DISP=OLD,VOL=PRIVATE
//MILE06   DD DSN=&ACNT..M.MILECARD,DISP=OLD,VOL=PRIVATE
//PRINT01  DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=1330)
//PUNCH06  DD SYSOUT=B,DCB=(RECFM=FB,LRECL=80,BLKSIZE=800)
//SYSUDUMP  DD SYSOUT=A
```

FIGURE 5.3-23
PROCEDURE SRVTMIP

```
//* CTL CN=DALLAS TRANSIT,JDATE=73200
//SRVBKUP   PROC ACNT='DALLAS.SRV',BCNT='CN1510.SRV'
//SRVBKUP  EXEC PGM=IEHDASDR,REGION=60K
//SYSPRINT DD SYSOUT=A
//DISK   DD UNIT=2314,DISP=OLD,VOL=(PRIVATE,SER=TMDISK)
//TAPE  DD DSN=&ACNT..SAVE(+1),UNIT=(2400-3,,DEFER),LABEL=(,SL),
//   DISP=(NEW,CATLG,DELETE)
//SYSIN DD DSN=&BCNT..S.CTL(CTLBKUP),DISP=SHR,VOL=PRIVATE
```

FIGURE 5.3-24
PROCEDURE SRVBKUP

```
//* CTL CN=1510,JDATE=74091
//SRVRDLY  PROC ACNT='CN1510.SRV',DSK='TMDISK'
//SRV51    EXEC  PGM=RP051A,COND=(7,LE),REGION=112K,
//       PARM='          AC TRANSIT          '
//STEPLIB DD DSN=&ACNT..LOAD,DISP=OLD,VOL=PRIVATE
//SORTLIB  DD  DSN=SYS1.SCRTLIB,DISP=SHR
//SYSOUT   DD DUMMY
//SORTWK01   DD UNIT=2314,SPACE=(CYL,(1,1),,CONTIG)
//SORTWK02   DD UNIT=2314,SPACE=(CYL,(1,1),,CONTIG)
//SORTWK03   DD UNIT=2314,SPACE=(CYL,(1,1),,CONTIG)
//SYSUDUMP   DD   SYSOUT=A
//PRINT01   DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=7182)
//IMSTR02   DD DSN=&ACNT..M.DLYEXT,DISP=OLD,VOL=PRIVATE
//DATE03   DD DSN=&ACNT..S.DATE,DISP=OLD,VOL=PRIVATE
//CONST04   DD DSN=&ACNT..S.FLTCON,DISP=OLD,VOL=PRIVATE
//ERR05   DD SYSOUT=A,DCB=(RECFM=F,BLKSIZE=133)
//WORK06   DD DSN=&SORT,UNIT=2314,DISP=(NEW,DELETE),
//       SPACE=(CYL,(5,1),,CONTIG),DCB=(RECFM=FB,LRECL=49,BLKSIZE=7252)
//WORK07   DD DSN=&REPORT,UNIT=2314,DISP=(NEW,DELETE),
//       SPACE=(CYL,(5,1),,CONTIG),DCB=(RECFM=FB,LRECL=49,BLKSIZE=7252)
//SRV52     EXEC  PGM=DT100A,COND=(7,LE),REGION=80K,
//       PARM='          AC TRANSIT          '
//STEPLIB DD DSN=&ACNT..LOAD,DISP=OLD,VOL=PRIVATE
//SYSUDUMP   DD   SYSOUT=A
//PRINT1    DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=133)
//PRINT2    DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=7182)
//PRINT3    DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=1330)
//PRINT4    DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=1330)
//PRINT5    DD SYSOUT=A,DCB=(RECFM=FB,LRECL=133,BLKSIZE=1330)
//CONST05   DD DSN=&ACNT..S.DLYCON,DISP=OLD,VOL=PRIVATE
//CONST06   DD DSN=&ACNT..S.UTNAME,DISP=OLD,VOL=PRIVATE
//ITRAN10   DD DSN=&ACNT..M.TEMPTRN,DISP=OLD,VOL=PRIVATE
//ITRAN11   DD DSN=&ACNT..M.MONTRAN(0),DISP=OLD,VOL=PRIVATE
//OTRAN12   DD DSN=&ACNT..M.MONTRAN(+1),DISP=(NEW,CATLG,DELETE),
//       UNIT=2314,VOL=(PRIVATE,SER=&DSK),
//       DCB=(RECFM=FB,LRECL=46,BLKSIZE=7268),SPACE=(TRK,(50,10),RLSE)
```

FIGURE 5.3-25
PROCEDURE SRVRDLY

6.0 SERVICE/UNIT CHANGE SYSTEM FILES

The major files used in the Service/Unit Change System are listed in Table 6.0-1. Their relationship in terms of processing is shown in Figures 6.0-1 and 6.0-2. The former illustrates the system as implemented at AC Transit District (ACTD); the latter illustrates the system as implemented at Dallas Transit System (DTS).

Each file is described in a File Specification Sheet and in Record Specification Sheets. The File Specification Sheet contains:

(a) File Name: This is the common user name for the file.

(b) FD Name: The COBOL name of the file, which provides an identity common to all programs.

(c) Data Set Name: This is the name used to reference the file in JCL commands.

(d) Number of Formats: The number of record types in the file.

(e) Record Size: The number of characters in a record of any type in the file.

(f) Record Formats: Each record in the file is referenced by format or transaction code, when appropriate, and the record name. The maximum and minimum number of each type of record in the file is shown, when appropriate.

(g) Program Use: Each program that uses the file is identified by name and number. The use of the file, as input and/or output, and the COBOL name by which the file is referenced in each program are described.

The Record Specification Sheet contains:

(a) Record Name: This is the common user name for the record.

(b) File Name: This is the common user name for the file that contains the record. It is provided as a cross-reference.

(c) COBOL Name of Record: The COBOL name of the record is the name given to the structure used to define the record.

(d) Record Format Code: The format or transaction code by which each type of record is referenced.

(e) Record Length: The number of characters in the record.

(f) a description of each data item in the record in terms of:

(1) initial character position of the field containing the item,

(2) the number of characters in the field,

(3) the type of characters in the field where:

9 represents digits

A represents alphabetic characters

X represents alphanumerics

(4) the COBOL name of the field, and

(5) a description of the data item.

Each subsection, as specified in Table 6.0-1, describes a file. A brief description of the purpose of each file is included.

TABLE 6.0-1

SIMS SERVICE/UNIT CHANGE SYSTEM FILES

Subsection Number	File Name	Data Set Name
6.1	Vehicle Master File	CN1510.SRV.M.VEHICLE ( )
6.2	Daily Constants File	CN1510.SRV.S.DLYCON
6.3	Fleet Constants File	CN1510.SRV.S.FLTCON
6.4	Unit Name File	CN1510.SRV.S.UTNAME
6.5	Unit Threshold File	CN1510.SRV.S.UTTHRS
6.6	Daily Transaction File	CN1510.SRV.M .TRTAPE
6.7	Temporary Storage Transaction File	CN1510.SRV.M.TRANS
6.8	Temporary Storage Sorted Transaction File	CN1510.SRV.M.SRTRANS
6.9	Daily Extract File	CN1510.SRV.M.DLYEXT
6.10	Temporary Transaction File	CN1510.SRV.M.TEMPTRN
6.11	Monthly Transaction File	CN1510.SRV.M.MONTRAN ( )
6.12	Transaction Master File	CN1510.SRV.M.TRANTAPE ( )
6.13	Request Date File	CN1510.SRV.S.DATE
6.14	Service System Control File	CN1510.SRV.S.CTL
6.15	Request Date Card File	DATECD
6.16	Card Input File	TRANCD
6.17	ACTD Tape Input File	DATA
6.18	DTS Tape Input File	MAGTAPE
6.19	DTS Temporary Disk File	DAILYTRN
6.20	Monthly Tire Mileage File	CN1510.SRV.M.MILECARD

TABLE 6.0-1 (Concluded)

Subsection Number	File Name	Data Set Name
6.21	Tire Mileage Punch File	SYSOUT=B
6.22	ASCII Translation File	CN1510.SRV.S.DTPARM
6.23	Vehicle Request Card File	SYSIN

( ) indicates that the file is a generation data set.

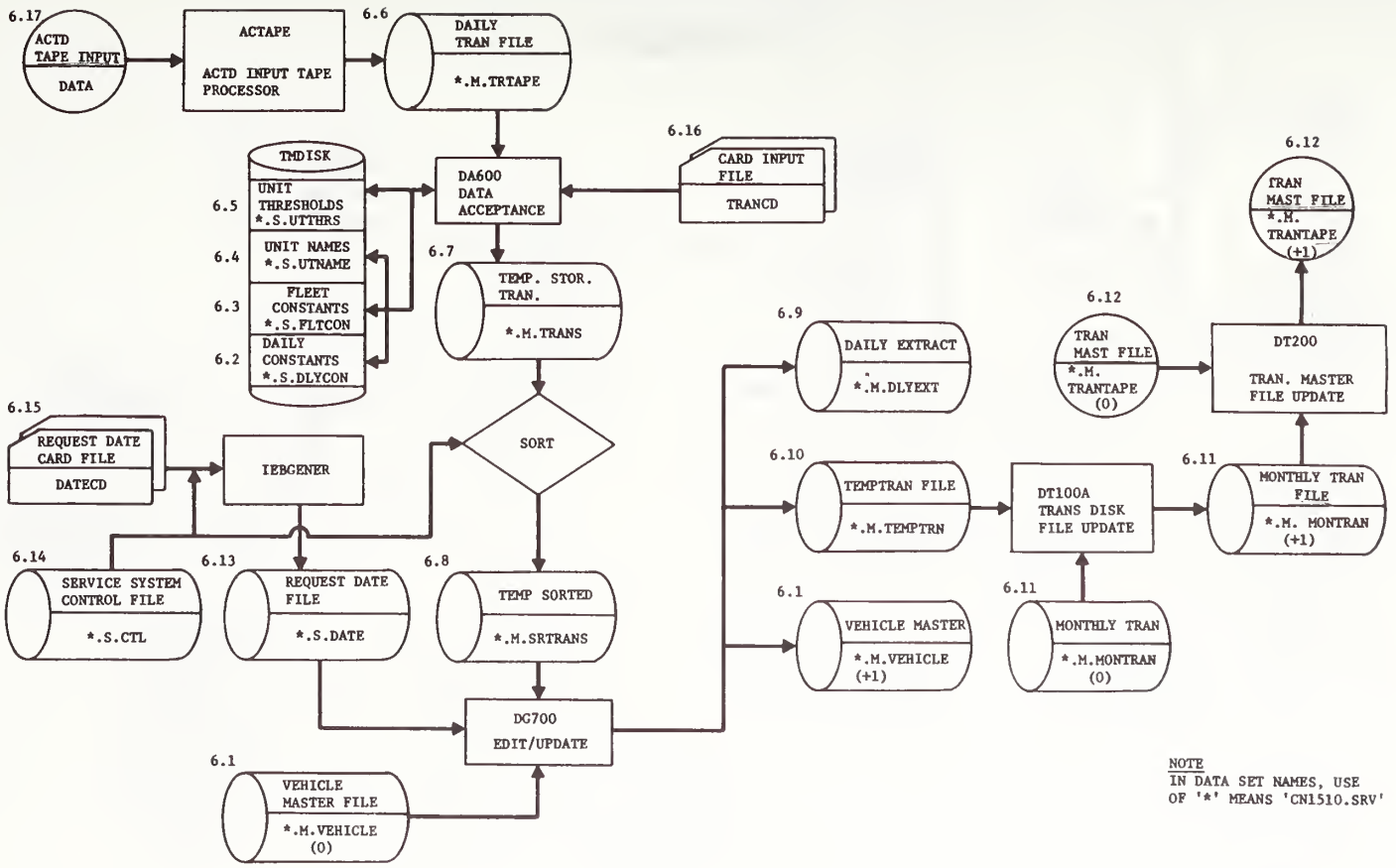


FIGURE 6.0-1
SIMS S/U SYSTEM FILES—ACTD

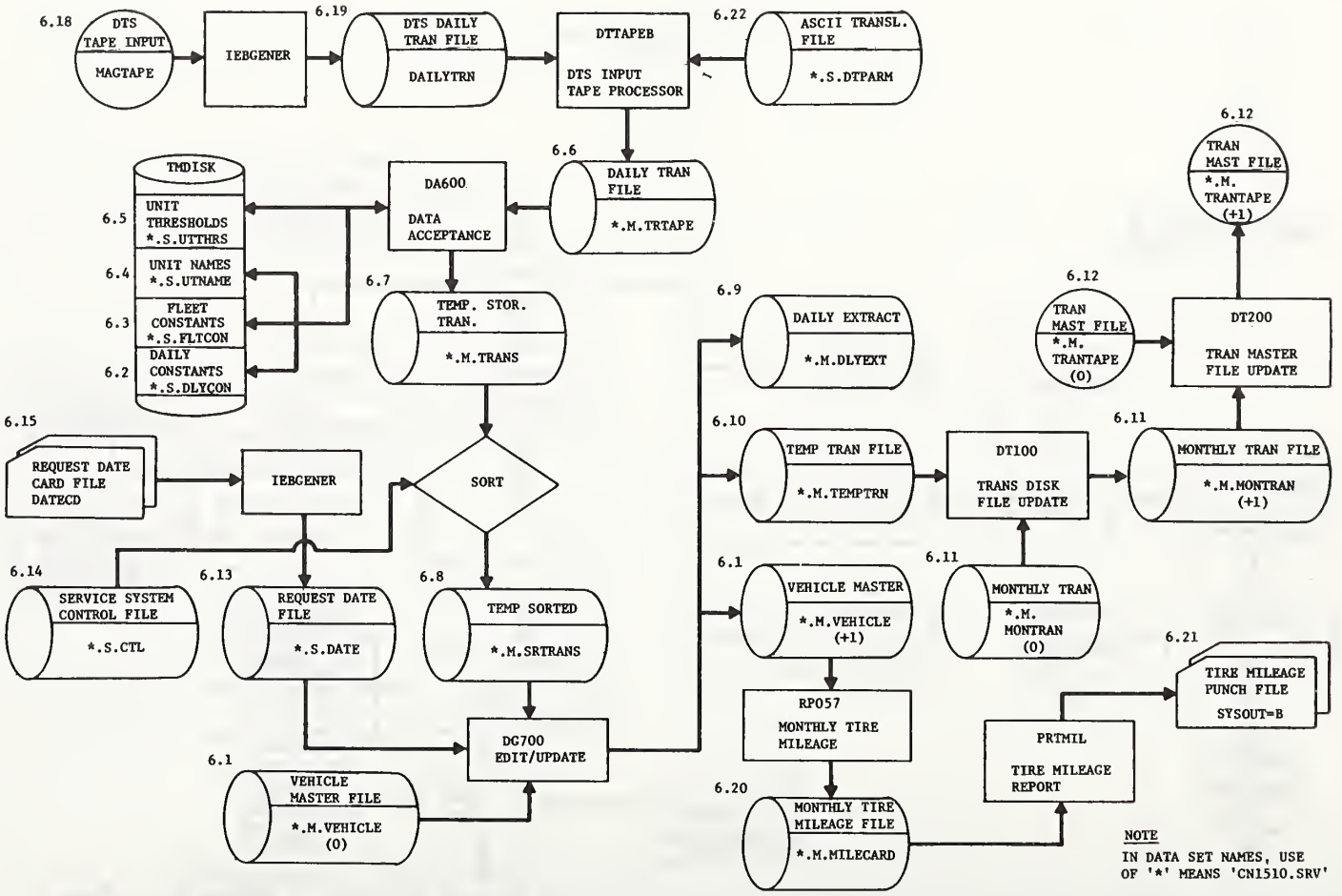


FIGURE 6.0-2
SIMS S/U SYSTEM FILES—DTS

6.1 Vehicle Master File (M.VEHICLE ( ))

The Vehicle Master File is a disk file, and is the central file of the S/U System. It contains, for each vehicle in the system, records of servicing performed, mileage traveled, and maintenance work done.

The Vehicle Master File is a generation data set. Three versions are saved on disk at all times. The versions represent the results of the three most recent system executions.

File and record specifications are given in Tables 6.1-1 through 6.1-12.

TABLE 6.1-1

SIMS S/U FILE SPECIFICATION

FILE NAME: Vehicle Master File

FD NAME: VEHICLFD

DATA SET NAME: M. VEHICLE( )

NUMBER OF RECORD FORMATS: 11 RECORD SIZE: 30 Characters

FILE ORGANIZATION: Records are sequenced by: Bus Number
Record Format Code
Record Date

RECORD FORMATS

FORMAT CODE	RECORD NAME	MAX. NO. PER BUS	MIN. NO. PER BUS
20	Header Record	1	1
21	Accumulated Miles Record	1	1
24	Daily Record	80	0
26	Monthly Summary Record	7	0
27	Monthly Commodity Cost Record	7	0
29	Inspection Record	1	0
31	Unit Change Record	50	0
34	Engine Rering Record	1	0
35	Engine Overhaul Record	1	0
38	Brake Mileage Record	1	0
39	Brake Drum Record	1	0

PROGRAM USE

PROGRAM IDENT.	PROGRAM NAME	I/O	PROGRAM COBOL NAME FOR FILE
RP053	Commodity Usage Report Generator	R	MASTER-FILE
RP054	Bus Analysis Report Generator	R	I-VEH-MASTER
RP055	Unit Change Candidates Report Generator	R	VEH-FILE
RP056	Brake Status Report Generator	R	VEH-FILE
RP057	Monthly Tire Mileage Processor	R	I-VEH-MASTER
RP059	Unit Status Report Generator	R	INPUT-VEH-MAST
DG700	Vehicle Master File Edit/Update	R	INPUT-VEH-MAST
DG700	Vehicle Master File Edit/Update	W	OUT-VEH-MAST
RP064	Coach History Report Generator	R	VEHL-FILE
RP066	Inspection Planning Report Generator	R	MASTER-FILE

TABLE 6.1-2

RECORD SPECIFICATION

RECORD NAME: Header Record

FILE NAME: Vehicle Master File

COBOL NAME OF RECORD: I-VEH-HEADER

RECORD FORMAT CODE: 20

RECORD LENGTH: 30 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-VEH-FORMAT	Record Format Code
3	4	9999	I-VEH-NO	Bus Number
7	6	9(6)	I-VEH-DATE	Date of Record
13	2	XX	I-VEH-FLEET-NBR	Fleet Number
15	2	XX	I-YR	Model Year
17	2	XX	I-SERV-CODE	Service Code
19	2	XX	I-ASSIGNMENT	Division Assignment
21	6	9(6)	I-ASSIGN-DATE	Date of Div. Assign.
27	2	XX	I-PRIOR-DIVIS	Prior Div. Assign.
29	2	XX	FILLER	
TOTAL	30			

TABLE 6.1-3

RECORD SPECIFICATION

RECORD NAME: Accumulated Miles Record

FILE NAME: Vehicle Master File

COBOL NAME OF RECORD: I-VEH-ACC-MILES

RECORD FORMAT CODE: 21

RECORD LENGTH: 30 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-VEH-FORMAT	Record Format Code
3	4	9999	I-VEH-NO	Bus Number
7	6	9(6)	I-VEH-DATE	Date of Record
13	7	S9(7)	I-MILES-PTD	Accum. Miles
20	11	X(11)	FILLER	
TOTAL	30			

TABLE 6.1-4

RECORD SPECIFICATION

RECORD NAME: Daily Record

FILE NAME: Vehicle Master File

COBOL NAME OF RECORD: I-VEH-DAILY

RECORD FORMAT CODE: 24

RECORD LENGTH: 30 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-VEH-FORMAT	Record Format Code
3	4	9999	I-VEH-NO	Bus Number
7	6	9(6)	I-VEH-DATE	Date of Record
13	4	XXXX	I-TERM-ID	Terminal ID
17	4	S9(4)	I-MILES-DAY	Daily Miles
21	4	S9(3)V9	I-FUEL-DAY	Daily Fuel
25	3	S99V9	I-OIL-DAY	Daily Oil
28	2	S99	I-COOL-DAY	Daily Coolant
30	1	S9	I-TORQUE-DAY	Daily Torque
TOTAL	30			

TABLE 6.1-5

RECORD SPECIFICATION

RECORD NAME: Monthly Summary Record

FILE NAME: Vehicle Master File

COBOL NAME OF RECORD: I-VEH-MONTHLY

RECORD FORMAT CODE: 26

RECORD LENGTH: 30 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-VEH-FORMAT	Record Format Code
3	4	9999	I-VEH-NO	Bus Number
7	6	9(6)	I-VEH-DATE	Date of Record
13	5	S9(5)	I-MILES-MTD	Mo Miles
18	5	S9(4)V9	I-FUEL-MTD	Mo Fuel
23	4	S9(3)V9	I-OIL-MTD	Mo Oil
27	3	S999	I-COOL-MTD	Mo Coolant
30	1	X	FILLER	
TOTAL	30			

TABLE 6.1-6

RECORD SPECIFICATION

RECORD NAME: Monthly Commodity Cost Record

FILE NAME: Vehicle Master File

COBOL NAME OF RECORD: I-VEH-MON-COST

RECORD FORMAT CODE: 27

RECORD LENGTH: 30 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-VEH-FORMAT	Record Format Code
3	4	9999	I-VEH-NO	Bus Number
7	6	9(6)	I-VEH-DATE	Date of Record
13	7	S9(4)V9(3)	I-FUEL-COST	Mo Fuel Cost
20	6	S9(3)V9(3)	I-OIL-COST	Mo Oil Cost
26	5	S9(2)V9(3)	I-COOL-COST	Mo Coolant Cost
TOTAL	30			

TABLE 6.1-7

RECORD SPECIFICATION

RECORD NAME: Inspection Record

FILE NAME: Vehicle Master File

COBOL NAME OF RECORD: I-VEH-INSPEC

RECORD FORMAT CODE: 29

RECORD LENGTH: 30 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-VEH-FORMAT	Record Format Code
3	4	9999	I-VEH-NO	Bus Number
7	6	9(6)	I-VEH-DATE	Date of Record
13	4	9999	I-INSP-PERFORM	Inspection Schedule and Step Performed
17	1	X	I-INSP-REASON	Reason for Inspection
18	7	S9(7)	I-INSP-ACCUM-MILES	Accumulated Miles at Inspection
25	4	9(4)	I-INSP-DUE	Inspection Schedule and Step Due
29	2	XX	I-INSP-DUE-TYPE	Inspection Type Due
TOTAL	30			

TABLE 6.1-8

RECORD SPECIFICATION

RECORD NAME: Unit Change Record

FILE NAME: Vehicle Master File

COBOL NAME OF RECORD: I-VEH-UNIT-CHG

RECORD FORMAT CODE: 31

RECORD LENGTH: 30 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-VEH-FORMAT	Record Format Code
3	4	9999	I-VEH-NO	Bus Number
7	6	9(6)	I-VEH-DATE	Date of Record
13	4	9999	I-GRP-UNIT-CODE	Group Unit Code of Unit Changed
17	1	X	I-CHG-REASON	Reason for Unit Change
18	7	S9(7)	I-UNIT-CHG-MILES	Accumulated Miles at Change
25	6	X(6)	FILLER	
TOTAL	30			

TABLE 6.1-9

RECORD SPECIFICATION

RECORD NAME: Engine Rering Record

FILE NAME: Vehicle Master File

COBOL NAME OF RECORD: I-VEH-RERING

RECORD FORMAT CODE: 34

RECORD LENGTH: 30 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-VEH-FORMAT	Record Format Code
3	4	9999	I-VEH-NO	Bus Number
7	6	9(6)	I-VEH-DATE	Date of Record
13	1	X	I-RERING-REASON	Reason for Rering Job
14	7	S9(7)	I-RERING-MILES	Accumulated Miles at Rering
21	10	X(10)	FILLER	
TOTAL	30			

TABLE 6.1-10

RECORD SPECIFICATION

RECORD NAME: Engine Overhaul Record

FILE NAME: Vehicle Master File

COBOL NAME OF RECORD: I-VEH-ENG-OVERHAUL

RECORD FORMAT CODE: 35

RECORD LENGTH: 30 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-VEH-FORMAT	Record Format Code
3	4	9999	I-VEH-NO	Bus Number
7	6	9(6)	I-VEH-DATE	Date of Record
13	1	X	I-OVHAUL-REASON	Reason for Eng Overhaul
14	7	S9(7)	I-OVHAUL-MILES	Accumulated Miles at Eng Overhaul
21	10	X(10)	FILLER	
TOTAL	30			

TABLE 6.1-11

RECORD SPECIFICATION

RECORD NAME: Brake Mileage Record

FILE NAME: Vehicle Master File

COBOL NAME OF RECORD: I-VEH-BRAKE-MILE

RECORD FORMAT CODE: 38

RECORD LENGTH: 30 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-VEH-FORMAT	Record Format Code
3	4	9999	I-VEH-NO	Bus Number
7	6	9(6)	I-VEH-DATE	Date of Record
13	1	X	I-BRAKE-REAS	Reason for Brake Job
14	7	S9(7)	I-BRAKE-MILES	Accumulated miles at Brake Job
21	4	XXXX	I-BRAKE-LINING	Brake Lining Code
25	6	X(6)	FILLER	
TOTAL	30			

TABLE 6.1-12

RECORD SPECIFICATION

RECORD NAME: Brake Drum Record

FILE NAME: Vehicle Master File

COBOL NAME OF RECORD: I-VEH-BRAKE-DRUM

RECORD FORMAT CODE: 39

RECORD LENGTH: 30 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-VEH-FORMAT	Record Format Code
3	4	9(4)	I-VEH-NO	Bus Number
7	6	9(6)	I-VEH-DATE	Date of Record
13	3	999	I-LF-DRUM	Left Front Drum Size
16	3	999	I-RF-DRUM	Right Front Drum Size
19	3	999	I-LR-DRUM	Left Rear Drum Size
22	3	999	I-RR-DRUM	Right Rear Drum Size
25	6	X(6)	FILLER	
TOTAL	30			

6.2 Daily Constants File (S.DLYCON)

The Daily Constants File is one of the four S/U System constants files. It contains records of commodity prices for fuel, oil, and coolant, as well as inspection schedule definitions. The file also contains system constants used in the Vehicle Master File updating procedures. Up to ten inspection schedule definitions can be stored in the file.

Tables 6.2-1 through 6.2-6 give file and record specifications for this file.

TABLE 6.2-1

SIMS S/U FILE SPECIFICATION

FILE NAME: Daily Constants File

FD NAME: DLYCNFD

DATA SET NAME: S.DLYCON

NUMBER OF RECORD FORMATS: 5 RECORD SIZE: 8 Characters

FILE ORGANIZATION: Records are sequenced by Record Format Code. The C4 records are in random order within the C4 sequence. The C5 records are sequenced by Inspection Schedule and Inspection Step.

RECORD FORMATS

FORMAT CODE	RECORD NAME	MAX. NO.	MIN. NO.
C1	Daily Transaction Limit Record	1	1
C2	Oil Price Record	1	1
C3	Coolant Price Record	1	1
C4	Fuel Price Record	9	9
C5	Inspection Schedule Record	220	0

PROGRAM USE

PROGRAM IDENT.	PROGRAM NAME	I/O	PROGRAM COBOL NAME FOR FILE
DT100	Transaction Disk File Update	R	DLY-CONST-FILE
RP054	Bus Analysis Report Generator	R	DLY-CONST-FILE
DG700	Vehicle Master File Edit/Update	R	INPUT-DLY-CON
DA600	Data Acceptance	R/W	DLY-CONST-FILE
RP062	Constants Files Listings Generator	R	DAY-FILE
RP064	Coach History Report Generator	R	DALY-FILE
RP066	Inspection Planning Report Generator	R	DLY-CONST-FILE

TABLE 6.2-2

RECORD SPECIFICATION

RECORD NAME: Daily Transaction Limit Record

FILE NAME: Daily Constants File

COBOL NAME OF RECORD: I-CN-LIMIT

RECORD FORMAT CODE: C1

RECORD LENGTH: 8 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-CN-CODE	Record Format Code
3	2	99	I-CN-DAYS-REC	Number of Days' Records
5	2	99	I-CN-MAX-DUP	Max Duplicate Records
7	2	XX	FILLER	
TOTAL	8			

TABLE 6.2-3

RECORD SPECIFICATION

RECORD NAME: Oil Price Record

FILE NAME: Daily Constants File

COBOL NAME OF RECORD: I-CN-OIL-PR

RECORD FORMAT CODE: C2

RECORD LENGTH: 8 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-CN-CODE	Record Format Code
3	4	9v9(3)	I-CN-OIL-PRICE	Oil Price
7	2	XX	FILLER	
TOTAL	8			

TABLE 6.2-4

RECORD SPECIFICATION

RECORD NAME: Coolant Price Record

FILE NAME: Daily Constants File

COBOL NAME OF RECORD: I-CN-COOL-PR

RECORD FORMAT CODE: C3

RECORD LENGTH: 8 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-CN-CODE	Record Format Code
3	4	9v9(3)	I-CN-COOL-PRICE	Coolant Price
7	2	XX	FILLER	
TOTAL	8			

TABLE 6.2-3

RECORD SPECIFICATION

RECORD NAME: Oil Price Record

FILE NAME: Daily Constants File

COBOL NAME OF RECORD: I-CN-OIL-PR

RECORD FORMAT CODE: C2

RECORD LENGTH: 8 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-CN-CODE	Record Format Code
3	4	9v9(3)	I-CN-OIL-PRICE	Oil Price
7	2	XX	FILLER	
TOTAL	8			

TABLE 6.2-4

RECORD SPECIFICATION

RECORD NAME: Coolant Price Record

FILE NAME: Daily Constants File

COBOL NAME OF RECORD: I-CN-COOL-PR

RECORD FORMAT CODE: C3

RECORD LENGTH: 8 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-CN-CODE	Record Format Code
3	4	9v9(3)	I-CN-COOL-PRICE	Coolant Price
7	2	XX	FILLER	
TOTAL	8			

TABLE 6.2-5

RECORD SPECIFICATION

RECORD NAME: Fuel Price Record

FILE NAME: Daily Constants File

COBOL NAME OF RECORD: I-CN-FUEL-PR

RECORD FORMAT CODE: C4

RECORD LENGTH: 8 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-CN-CODE	Record Format Code
3	4	9v9(3)	I-CN-FUEL-PRICE	Fuel Price
7	2	XX	I-CN-FUEL-TYPE	Fuel Type
TOTAL	8			

TABLE 6.2-6

RECORD SPECIFICATION

RECORD NAME: Inspection Schedule Record

FILE NAME: Daily Constants File

COBOL NAME OF RECORD: I-CN-INSP

RECORD FORMAT CODE: C5

RECORD LENGTH: 8 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-CN-CODE	Record Format Code
3	2	99	I-CN-INSP-SCH	Insp Schedule
5	2	99	I-CN-INSP-STEP	Insp Step
7	2	XX	I-CN-INSP-TYPE	Insp Type
	—	99	I-CN-INSP-INV	(Redefines Insp Type)
TOTAL	8			

NOTE: First record in a schedule has I-CN-INSP-STEP =00 and I-CN-INSP-INV = number of steps in schedule.
Last record in a schedule has I-CN-INSP-STEP = 99 and I-CN-INSP-INV = inspection interval.

6.3 Fleet Constants File (S.FLTCON)

The Fleet Constants File is one of four S/U System constants files. It contains one record per valid fleet in the system. Up to 40 fleet records can be stored in the file. The records contain test values for checking commodities dispensed to the vehicles in the system.

File and record specifications are given in Tables 6.3-1 and 6.3-2.

TABLE 6.3-1

SIMS S/U FILE SPECIFICATION

FILE NAME: Fleet Constants File

FD NAME: FLTCNFD

DATA SET NAME: S.FLTCON

NUMBER OF RECORD FORMATS: 1 RECORD SIZE: 66 Characters

FILE ORGANIZATION: Records are sequenced by Fleet Number.

RECORD FORMATS

FORMAT CODE	RECORD NAME	MAX. NO. OF FLEETS	MIN. NO. OF FLEETS
F1	Fleet Constants Record	40	1

PROGRAM USE

PROGRAM IDENT.	PROGRAM NAME	I/O	PROGRAM COBOL NAME FOR FILE
RP051	Commodity Report Generator	R	FLT-CONST-FILE
RP054	Bus Analysis Report Generator	R	FLT-CONST-FILE
DA600	Data Acceptance	R/W	FLT-CONST-FILE
DG700	Vehicle Master File Edit/Update	R	INPUT-FLT-CON
RP053	Commodity Usage Report Generator	R	CONST-FILE
RP056	Brake Status Report Generator	R	FLT-FILE
RP062	Constants Files Listings Generator	R	FLEET-FILE

TABLE 6.3-2

RECORD SPECIFICATION

RECORD NAME: Fleet Constants Record

FILE NAME: Fleet Constants File

COBOL NAME OF RECORD: I-CN-FLEET-CONST

RECORD FORMAT CODE: F1

RECORD LENGTH: 66 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	FILLER	'F1'
3	2	XX	I-CN-FLEET-NBR	Fleet Number
5	2	XX	I-CN-FLT-FUEL-TYPE	Fleet Fuel Type
7	3	999	I-CN-FUEL-CAP	Fuel Capacity
10	2	99	I-CN-OIL-CAP	Oil Capacity
12	2	99	I-CN-COOL-CAP	Coolant Capacity
14	3	XXX	FILLER	
17	2	99	I-CN-DLY-O-MAX	Max Daily Oil Usage
19	2	99	I-CN-DLY-C-MAX	Max Daily Coolant Usage
21	4	99V99	I-CN-WK-FUEL-MIN	Min 7-Day Fuel Limit (m.p.g)
25	4	9(4)	I-CN-WK-OIL-MIN	Min 7-Day Oil Limit (m.p.q.)
29	2	99	I-CN-WK-COOL-MIN	Min Weekly Coolant Limit (quarts)
31	4	99V99	I-CN-WK-FUEL-MAX	Max 7-Day Fuel Limit (m.p.g.)
35	4	9(4)	I-CN-WK-OIL-MAX	Max 7-Day Oil Limit (m.p.q.)
39	2	99	I-CN-WK-COOL-MAX	Max 7-Day Coolant Limit (quarts)
41	4	99V99	I-CN-28-FUEL-MIN	Min 28-Day Fuel Limit (m.p.g.)
45	4	9(4)	I-CN-28-OIL-MIN	Min 28-Day Oil Limit (m.p.q.)
49	2	99	I-CN-28-COOL-MIN	Min 28-Day Coolant Limit (quarts)
51	4	99V99	I-CN-28-FUEL-MAX	Max 28-Day Fuel Limit (m.p.g.)
55	4	9(4)	I-CN-28-OIL-MAX	Max 28-Day Oil Limit (m.p.q.)
59	2	99	I-CN-28-COOL-MAX	Max 28-Day Coolant Limit (quarts)
61	3	999	I-CN-FT-BRK-THRES	Front Brake Drum Threshold Value (thousandths inch)
64	3	999	I-CN-RR-BRK-THRES	Rear Brake Drum Threshold Value (thousandths inch)
TOTAL	66			

6.4 Unit Name File (S.UTNAME)

The Unit Name File is one of the four S/U System constants files. It contains one record for each unit for which records are maintained in the system. The record contains the name of the unit and the group-unit code associated with that name. A maximum of 50 units may be kept on file.

File and record specifications are given in Tables 6.4-1 and 6.4-2.

TABLE 6.4-1

SIMS S/U FILE SPECIFICATION

FILE NAME: Unit Name File

FD NAME: GRPIDFD

DATA SET NAME: S.UTNAME

NUMBER OF RECORD FORMATS: 1 RECORD SIZE: 36 Characters

FILE ORGANIZATION: Records are sequenced by Group/Unit Code.

RECORD FORMATS

FORMAT CODE	RECORD NAME	MAX. NO. IN FILE	MIN. NO. IN FILE
U1	Unit Name Record	50	0

PROGRAM USE

PROGRAM IDENT.	PROGRAM NAME	I/O	PROGRAM COBOL NAME FOR FILE
DT100	Transaction Disk File Update	R	UN-NAME-FILE
DA600	Data Acceptance	R/W	NAME-CONST-FILE
DG700	Vehicle Master File Edit/Update	R	INPUT-UNIT-NAME
RP055	Unit Candidates Report Generator	R	GRDI-FILE
RP058	Units Changed Report Generator	R	INPUT-UNIT-NAME
RP062	Constants Files Listings Generator	R	NAME-FILE
RP064	Coach History Report Generator	R	NAME-FILE

TABLE 6.4-2

RECORD SPECIFICATION

RECORD NAME: Unit Name Record

FILE NAME: Unit Name File

COBOL NAME OF RECORD: N-GRP-UNIT-NAME

RECORD FORMAT CODE: U1

RECORD LENGTH: 36 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	N-GU-REC-TYPE	Record Format Code
3	2	99	N-GU-ID	Group Code
5	2	99	N-UNIT-ID	Unit Code
7	30	X(30)	N-UNIT-NAME	Unit Name
TOTAL	36			

6.5 Unit Threshold File (S.UTTHRS)

The Unit Threshold File is one of the four S/U System constants files. It contains, for each unit in the system, a set of records. This set contains one record for each fleet for which unit records are maintained. The record contains a mileage test value. This test value is used to determine whether a unit is a candidate for change based on mileage since last unit change.

A maximum of 2000 records may be kept on this file. File and record specification sheets are given in Table 6.5-1 and 6.5-2.

TABLE 6.5-1

SIMS S/U FILE SPECIFICATION

FILE NAME: Unit Threshold File

FD NAME: THVALFD

DATA SET NAME: S.UTTHRS

NUMBER OF RECORD FORMATS: 1 RECORD SIZE: 10 Characters

FILE ORGANIZATION: Records are sequenced by Fleet No. and Group-Unit Code.

RECORD FORMATS

FORMAT CODE	RECORD NAME	MAX. NO. FOR FILE	MIN. NO. FOR FILE
	Unit Threshold Value Record	2000	0

PROGRAM USE

PROGRAM IDENT.	PROGRAM NAME	I/O	PROGRAM COBOL NAME FOR FILE
DA600	Data Acceptance	R/W	VAL-CONST-FILE
RP055	Unit Candidates Report Generator	R	THVH-FILE
RP056	Brake Status Report Generator	R	THV-FILE
RP062	Constants Files Listings Generator	R	THRES-FILE

TABLE 6.5-2

RECORD SPECIFICATION

RECORD NAME: Unit Threshold Value Record

FILE NAME: Unit Threshold File

COBOL NAME OF RECORD: T-UNIT-THRES-VAL

RECORD FORMAT CODE: None

RECORD LENGTH: 10 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	T-THRES-FLT	Fleet No.
3	4	9999	T-THRES-GRP-UNIT	Group-Unit Code
7	3	999	T-UNIT-T-VAL	Threshold Value (Thousand Miles)
10	1	X	FILLER	
TOTAL	10			

6.6 Daily Transaction File (M.TRTAPE)

The Daily Transaction File (M.TRTAPE) is a disk storage file. It receives 80-character transaction records in a format acceptable to the S/U System. Servicing records were entered in the system through automated data collectors; they have been converted to the S/U format by a preprocessor program. At DTS, non-data collector records are also passed, without format conversion, to the Daily Transaction File.

The file specification is given in Table 6.6-1 and the record specifications are given in Tables 6.6-2 through 6.6-12.

TABLE 6.6-1

SIMS S/U FILE SPECIFICATION

FILE NAME: Daily Transaction File

FD NAME: SRVTRAN

DATA SET NAME: M.TRTAPE

NUMBER OF RECORD FORMATS: 11 RECORD SIZE: 80 Characters

FILE ORGANIZATION: Random order

RECORD FORMATS

TRANSACTION CODE	RECORD NAME	MAX. NO. PER FILE	MIN. NO. PER FILE
Ø2	Daily Miles Record	U	0
Ø3	Vehicle Inspection Performed Record	U	0
13	Unit Change Performed Record	U	0
15	Brake Reline Performed Record	U	0
17	Vehicle Servicing Performed Record	U	0
19,D9	Vehicle Assignment Record	U	0
C1	Service System Constants Record	U	0
C5,D5	Inspection Schedule Definition Record	U	0
F1	Fleet Constants and Limits Record	U	0
T1,DT	Unit Threshold Record	U	0
U1	Vehicle Group-Unit Description Record	U	0

PROGRAM USE

PROGRAM IDENT.	PROGRAM NAME	I/O	PROGRAM COBOL NAME FOR FILE
DTTAPE	Dallas Input Tape Processor	W	OUTFILED
ACTAPE	ACTD Input Tape Processor	W	OUTDISK
DA600	Data Acceptance	R	INPUT-TRANSACT

TABLE 6.6-2

RECORD SPECIFICATION

RECORD NAME: Daily Miles Record

FILE NAME: Daily Transaction File

COBOL NAME OF RECORD: WS-SRV-DAILY-MILES

TRANSACTION CODE: Ø2

RECORD LENGTH: 80 Characters

FIELD POS.	FIELD LENG	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	WS-SRV-CODE	Transaction code
3	6	X(6)	WS-SRV-DATE	Vehicle operation date
9	4	X(4)	WS-SRV-VEH-NBR	Vehicle number
13	4	9(4)	WS-SRV-MILES	Daily miles
17	1	X	WS-SRV-MILES-OPR	Miles operator
18	63	X(63)	FILLER	
TOTAL	80			

TABLE 6.6-3

RECORD SPECIFICATION

RECORD NAME: Vehicle Inspection Performed Record

FILE NAME: Daily Transaction File

COBOL NAME OF RECORD: WS-SRV-I-PERFORM

TRANSACTION CODE: Ø3

RECORD LENGTH: 80 Characters

FIELD POS.	FIELD LENG	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	WS-SRV-CODE	Transaction code
3	6	X(6)	WS-SRV-DATE	Inspection performed date
9	4	X(4)	WS-SRV-VEH-NBR	Vehicle number
13	2	99	WS-SRV-SCH-PER	Inspection schedule performed
15	2	99	WS-SRV-STEP-PER	Inspection step performed
17	1	X	WS-SRV-REAS-CDE	Job reason code
18	7	9(7)	WS-SRV-I-ACC-MI	Accumulated miles at insp
25	1	X	WS-SRV-COR-CODE	Correction modifier code
26	2	XX	WS-SRV-WORK-CTR	Work center (division)
28	53	X(53)	FILLER	Filler
TOTAL	80			

TABLE 6.6-4

RECORD SPECIFICATION

RECORD NAME: Unit Change Performed Record

FILE NAME: Daily Transaction File

COBOL NAME OF RECORD: WS-SRV-UC-PER

TRANSACTION CODE: 13

RECORD LENGTH: 80 Characters

FIELD POS.	FIELD LENG	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	WS-SRV-CODE	Transaction code
3	6	X(6)	WS-SRV-DATE	Unit change performed date
9	4	X(4)	WS-SRV-VEH-NBR	Vehicle number
13	2	99	WS-SRV-CHG-GRP	Group-unit code
15	2	99	WS-SRV-CHG-UNIT	
17	1	X	WS-SRV-REAS-CDE	Job reason code
18	7	9(7)	WS-SRV-I-ACC-MI	Accumulated miles at unit change
25	1	X	WS-SRV-COR-CODE	Correction modifier code
26	2	XX	WS-SRV-WORK-CTR	Work center (division)
28	53	X(53)	FILLER	Filler
TOTAL	80			

TABLE 6.6-5

RECORD SPECIFICATION

RECORD NAME: Brake Reline Performed Record

FILE NAME: Daily Transaction File

COBOL NAME OF RECORD: WS-SRV-BRK-DRUM

TRANSACTION CODE: 15

RECORD LENGTH: 80 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	WS-SRV-CODE	Transaction code
3	6	X(6)	WS-SRV-DATE	Brake reline performed date
9	4	X(4)	WS-SRV-VEH-NBR	Vehicle Number
13	1	X	WS-SRV-BRK-REAS	Job reason code
14	3	X(3)	WS-SRV-SIZE-LF	Brake drum size-left front
17	3	X(3)	WS-SRV-SIZE-RF	Brake drum size-right front
20	3	X(3)	WS-SRV-SIZE-LR	Brake drum size-left rear
23	3	X(3)	WS-SRV-SIZE-RR	Brake drum size-right rear
26	4	X(4)	WS-SRV-BRK-LIN	Brake lining code
30	7	9(7)	WS-SRV-BRK-MI	Accumulated miles at brake reline
37	1	X	WS-SRV-BRK-COR-CODE	Correction modifier code
38	2	XX	WS-SRV-BRK-WORK-CTR	Work center (division)
40	41	X(41)	FILLER	Filler
TOTAL	80			

TABLE 6.6-6

RECORD SPECIFICATION

RECORD NAME: Vehicle Servicing Performed Record

FILE NAME: Daily Transaction File

COBOL NAME OF RECORD: WS-SRV-SERV-REC

TRANSACTION CODE: 17

RECORD LENGTH: 80 Characters

FIELD POS.	FIELD LENG	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	WS-SRV-CODE	Transaction code
3	6	X(6)	WS-SRV-DATE	Vehicle servicing date
9	2	XX	WS-SRV-S-WORK-CTR	Work center (division)
11	4	X(4)	WS-SRV-S-VEH-NBR	Vehicle number
15	4	9(3)v9	WS-SRV-FUEL-N	Fuel (gallons)
19	1	X	WS-SRV-FUEL-OPR	Fuel operator
20	3	99v9	WS-SRV-OIL-N	Oil (quarts)
23	1	X	WS-SRV-OIL-OPR	Oil operator
24	2	99	WS-SRV-COOL-N	Coolant (quarts)
26	1	X	WS-SRV-COOL-OPR	Coolant operator
27	1	9	WS-SRV-TOR-N	Torque fluid (quarts)
28	1	X	WS-SRV-TOR-OPR	Torque fluid operator
29	4	X(4)	WS-SRV-TERM-ID	Terminal ID number
33	48	X(48)	FILLER	Filler
TOTAL	80			

TABLE 6.6-7

RECORD SPECIFICATION

RECORD NAME: Vehicle Assignment Record

FILE NAME: Daily Transaction File

COBOL NAME OF RECORD: WS-SRV-VEH-ASSIGN

TRANSACTION CODE: 19, D9

RECORD LENGTH: 80 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	WS-SRV-CODE	Transaction code
3	6	X(6)	WS-SRV-DATE	SIMS date
9	2	XX	WS-SRV-MODEL-YR	Model year
11	4	X(4)	WS-SRV-VEH-NBR	Vehicle number
15	2	99	WS-SRV-ASG-SCH	Inspection schedule assigned
17	2	99	WS-SRV-ASG-STEP	Inspection step assigned
19	2	XX	WS-SRV-FLT-ASG	Fleet assignment
21	2	XX	WS-SRV-DIV-ASG	Division assignment
23	2	XX	WS-SRV-SERV-ASG	Service assignment
25	7	X(7)	WS-SRV-A-ACCUM-MILES	Accumulated miles at SIMS date
32	49	X(49)	FILLER	Filler
TOTAL	80			

TABLE 6.6-8

RECORD SPECIFICATION

RECORD NAME: Service System Constants Record

FILE NAME: Daily Transaction File

COBOL NAME OF RECORD: WS-SRV-SERV-CONST

TRANSACTION CODE: C1

RECORD LENGTH: 80 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	WS-SRV-CODE	Transaction code
3	6	X(6)	WS-SRV-DATE	Constants date
9	2	XX	WS-SRV-DAY-REC	Days' records
11	2	XX	WS-SRV-MAX-DUP	Maximum duplicates
13	2	XX	FILLER	Filler
15	4	9v9(3)	WS-SRV-OIL-PR	Oil price (per quart)
19	4	9v9(3)	WS-SRV-COOL-PR	Coolant price (per quart)
23	2	XX	WS-SRV-FUEL1	Fuel type - D1
25	4	9v9(3)	WS-SRV-FUEL-PR1	D1 fuel price
29	2	XX	WS-SRV-FUEL2	Fuel type - D2
31	4	9v9(3)	WS-SRV-FUEL-PR2	D2 fuel price
35	2	XX	WS-SRV-FUEL3	Fuel type - G1
37	4	9v9(3)	WS-SRV-FUEL-PR3	G1 fuel price
41	2	XX	WS-SRV-FUEL4	Fuel type - G2
43	4	9v9(3)	WS-SRV-FUEL-PR4	G2 fuel price
47	2	XX	WS-SRV-FUEL5	Fuel type - LNG
49	4	9v9(3)	WS-SRV-FUEL-PR5	LNG price
53	2	XX	WS-SRV-FUEL6	Fuel type - CNG
55	4	9v9(3)	WS-SRV-FUEL-PR6	CNG price
59	2	XX	WS-SRV-FUEL7	Fuel type - LPG
61	4	9v9(3)	WS-SRV-FUEL-PR7	LPG price
65	2	XX	WS-SRV-FUEL8	Fuel type - Other fuel 1
67	4	9v9(3)	WS-SRV-FUEL-PR8	Other fuel 1 price
71	2	XX	WS-SRV-FUEL9	Fuel type - Other fuel 2
73	4	9v9(3)	WS-SRV-FUEL-PR9	Other fuel 2 price
77	4	X(4)	FILLER	Filler
TOTAL	80			

TABLE 6.6-9

RECORD SPECIFICATION

RECORD NAME: Inspection Schedule Definition Record

FILE NAME: Daily Transaction File

COBOL NAME OF RECORD: WS-SRV-INSP-SCHED

TRANSACTION CODE: C5, D5

RECORD LENGTH: 80 Characters

FIELD POS	FIELD LENG	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	WS-SRV-CODE	Transaction code
3	6	X(6)	WS-SRV-DATE	Inspection definition date
9	2	99	WS-SRV-I-SCH	Inspection schedule
11	2	99	WS-SRV-I-STEP	Inspection step
13	2	XX	WS-SRV-INSPEC-TYPE	Inspection type
15	66	X(66)	FILLER	Filler
TOTAL	80			

TABLE 6.6-10

RECORD SPECIFICATION

RECORD NAME: Fleet Constants and Limits Record

FILE NAME: Daily Transaction File

COBOL NAME OF RECORD: WS-SRV-FLT-LIM

TRANSACTION CODE: F1

RECORD LENGTH: 80 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	WS-SRV-CODE	Transaction code
3	6	X(6)	WS-SRV-DATE	Fleet limits date
9	2	XX	WS-SRV-FLT-NBR	Fleet number
11	2	XX	FILLER	Filler
13	2	XX	WS-SRV-FUEL-TYPE	Fuel type
15	3	X(3)	WS-SRV-A-FUEL-CAP	Fuel capacity
18	2	XX	WS-SRV-A-OIL-CAP	Oil capacity
20	2	XX	WS-SRV-A-COOL-CAP	Coolant capacity
22	3	X(3)	FILLER	Filler
25	2	XX	WS-SRV-DLY-OIL-MAX	Daily oil maximum
27	2	XX	WS-SRV-DLY-COOL-MAX	Daily coolant maximum
29	4	X(4)	WS-SRV-WK-F-MIN	7-day fuel minimum (m.p.g.)
33	4	X(4)	WS-SRV-WK-O-MIN	7-day oil minimum (m.p.q.)
37	2	XX	WS-SRV-WK-C-MIN	7-day coolant minimum (quarts)
39	4	X(4)	WS-SRV-WK-F-MAX	7-day fuel maximum (m.p.g.)
43	4	X(4)	WS-SRV-WK-O-MAX	7-day oil maximum (m.g.q.)
47	2	XX	WS-SRV-WK-C-MAX	7-day coolant maximum (quarts)
49	4	X(4)	WS-SRV-28-F-MIN	28-day fuel minimum (m.p.g.)
53	4	X(4)	WS-SRV-28-O-MIN	28-day oil minimum (m.p.q.)
57	2	XX	WS-SRV-28-C-MIN	28-day coolant minimum (quarts)
59	4	X(4)	WS-SRV-28-F-MAX	28-day fuel maximum (m.p.g.)
63	4	X(4)	WS-SRV-28-O-MAX	28-day oil maximum (m.p.q.)
67	2	XX	WS-SRV-28-C-MAX	28-day coolant maximum (quarts)
69	3	9(3)	WS-SRV-FB-THR	Front brake drum threshold
72	3	9(3)	WS-SRV-RB-THR	Rear brake drum threshold
75	6	X(6)	FILLER	Filler
TOTAL	80			

TABLE 6.6-11

RECORD SPECIFICATION

RECORD NAME: Unit Threshold Value Record

FILE NAME: Daily Transaction File

COBOL NAME OF RECORD: WS-SRV-TH-VAL

TRANSACTION CODE: T1, DT

RECORD LENGTH: 80 Characters

FIELD POS.	FIELD LENG	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	WS-SRV-CODE	Transaction code
3	6	X(6)	WS-SRV-DATE	Transaction date
9	2	XX	WS-SRV-TH-FLEET	Fleet number
11	2	99	WS-SRV-TH-GROUP	Group code
13	2	99	WS-SRV-TH-UNIT	Unit code
15	3	X(3)	WS-SRV-THRES-VAL	Threshold value (thousand miles)
18	1	X	WS-SRV-NOT-FACTR	Filler (Reserved for Unit Notice Factor)
19	62	X(62)	FILLER	Filler
TOTAL	80			

TABLE 6.6-12

RECORD SPECIFICATION

RECORD NAME: Vehicle Group-Unit Description Record

FILE NAME: Daily Transaction File

COBOL NAME OF RECORD: WS-SRV-GROUP-UNIT

TRANSACTION CODE: U1

RECORD LENGTH: 80 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	WS-SRV-CODE	Transaction code
3	6	X(6)	WS-SRV-DATE	Group-Unit date
9	2	99	WS-SRV-GROUP	Group code
11	2	99	WS-SRV-UNIT	Unit code
13	30	X(30)	WS-SRV-UNIT-NAME	Unit name
43	38	X(38)	FILLER	Filler
TOTAL	80			

6.7 Temporary Storage Transaction File (M.TRANS)

The Temporary Storage Transaction File is a disk file. It contains vehicle transactions that have been reformatted from the 80-character S/U input transactions. The new format consists of a 12-character sort key and the first 46 characters of the input transaction. This is the format required for processing by the system.

File and record specifications are given in Tables 6.7-1 through 6.7-7.

TABLE 6.7-1

SIMS S/U FILE SPECIFICATION

FILE NAME: Temporary Storage Transaction File

FD NAME: None

DATA SET NAME: M.TRANS

NUMBER OF RECORD FORMATS: 6 RECORD SIZE: 58 Characters

FILE ORGANIZATION: Random order.

RECORD FORMATS

FORMAT CODE	RECORD NAME	MAX. NO. PER FILE	MIN. NO. PER FILE
02	Daily Miles Record	U	0
03	Vehicle Inspection Performed Record	U	0
13	Unit Change Performed Record	U	0
15	Brake Reline Performed Record	U	0
17	Vehicle Servicing Performed Record	U	0
19,D9	Vehicle Assignment Record	U	0

PROGRAM USE

PROGRAM IDENT.	PROGRAM NAME	I/O	PROGRAM COBOL NAME FOR FILE
DA600	Data Acceptance	W	OUTPUT-TRANSACT
IERRC000	Sort/Merge Utility	R	None

TABLE 6.7-2

RECORD SPECIFICATION

RECORD NAME: Daily Miles Record

FILE NAME: Temporary Storage Transaction File

COBOL NAME OF RECORD: WS-SRV-DAILY-MILES

RECORD FORMAT CODE: 02

RECORD LENGTH: 58 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	4	9999	WS-KEY-VEH-NBR	Vehicle Number
5	6	9(6)	WS-KEY-DATE	Transaction Date (YYMMDD)
11	2	99	WS-KEY-FORMAT	Internal Sort Code (= 13)
13	2	XX	WS-SRV-CODE	Record Format Code
15	6	9(6)	WS-SRV-DATE	Transaction Date
21	4	9(4)	WS-SRV-VEH-NBR	Vehicle Number
25	4	9(4)	WS-SRV-MILES	Daily Miles
29	1	X	WS-SRV-MILES-OPR	Miles Operator Code
30	29	X(29)	FILLER	
TOTAL	58			

TABLE 6.7-3

RECORD SPECIFICATION

RECORD NAME: Vehicle Inspection Performed Record

FILE NAME: Temporary Storage Transaction File

COBOL NAME OF RECORD: WS-SRV-I-PERFORM

RECORD FORMAT CODE: 03

RECORD LENGTH: 58 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	4	9(4)	WS-KEY-VEH-NBR	Vehicle Number
5	6	9(6)	WS-KEY-DATE	Transaction Date
11	2	99	WS-KEY-FORMAT	Internal Sort Code (= 15)
13	2	XX	WS-SRV-CODE	Record Format Code
15	6	9(6)	WS-SRV-DATE	Transaction Date
21	4	9(4)	WS-SRV-VEH-NBR	Vehicle Number
25	4	9(4)	WS-SRV-INSP-PER	Inspection Performed
29	1	X	WS-SRV-REAS-CDE	Reason for Inspection
30	7	9(7)	WS-SRV-I-ACC-MI	Accumulated Miles at Inspection
37	1	X	WS-SRV-COR-CODE	Correction Code
38	2	XX	WS-SRV-WORK-CTR	Work Center
40	19	X(19)	FILLER	
TOTAL	58			

TABLE 6.7-4

RECORD SPECIFICATION

RECORD NAME: Unit Change Performed Record

FILE NAME: Temporary Storage Transaction File

COBOL NAME OF RECORD: WS-SRV-UC-PER

RECORD FORMAT CODE: 13

RECORD LENGTH: 58 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	4	9(4)	WS-KEY-VEH-NBR	Vehicle Number
5	6	9(6)	WS-KEY-DATE	Transaction Date
11	2	99	WS-KEY-FORMAT	Internal Sort Code (= 16)
13	2	XX	WS-SRV-CODE	Record Format Code
15	6	9(6)	WS-SRV-DATE	Transaction Date
21	4	9(4)	WS-SRV-VEH-NBR	Vehicle Number
25	4	9(4)	WS-SRV-U-CHG	Group-Unit Code
29	1	X	WS-SRV-REAS-CDE	Reason Code for Change
30	7	9(7)	WS-SRV-I-ACC-MI	Accumulated Miles at Change
37	1	X	WS-SRV-COR-CODE	Correction Code
38	2	XX	WS-SRV-WORK-CTR	Work Center
40	19	X(19)	FILLER	
TOTAL	58			

TABLE 6.7-5

RECORD SPECIFICATION

RECORD NAME: Brake Reline Performed Record

FILE NAME: Temporary Storage Transaction File

COBOL NAME OF RECORD: WS-SRV-BRK-DRUM

RECORD FORMAT CODE: 15

RECORD LENGTH: 58 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	4	9(4)	WS-KEY-VEH-NBR	Vehicle Number
5	6	9(6)	WS-KEY-DATE	Transaction Date
11	2	99	WS-KEY-FORMAT	Internal Sort Code (= 17)
13	2	XX	WS-SRV-CODE	Record Format Code
15	6	9(6)	WS-SRV-DATE	Transaction Date
21	4	9(4)	WS-SRV-VEH-NBR	Vehicle Number
25	1	X	WS-SRV-BRK-REAS	Reason For Brake Job
26	3	XXX	WS-SRV-SIZE-LF	Size of Left Front Drum
29	3	XXX	WS-SRV-SIZE-RF	Size of Right Front Drum
32	3	XXX	WS-SRV-SIZE-LR	Size of Left Rear Drum
35	3	XXX	WS-SRV-SIZE-RR	Size of Right Rear Drum
38	4	X(4)	WS-SRV-BRK-LIN	Brake Lining Code
42	7	9(7)	WS-SRV-BRK-MI	Accumulated Miles at Brake Job
49	1	X	WS-SRV-BRK-COR-CODE	Correction Code
50	2	XX	WS-SRV-BRK-WORK-CTR	Work Center
52	7	X(7)	FILLER	
TOTAL	58			

TABLE 6.7-6

RECORD SPECIFICATION

RECORD NAME: Vehicle Servicing Performed Record

FILE NAME: Temporary Storage Transaction File

COBOL NAME OF RECORD: WS-SRV-SERV-REC

RECORD FORMAT CODE: 17

RECORD LENGTH: 58 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	4	9(4)	WS-KEY-VEH-NBR	Vehicle Number
5	6	9(6)	WS-KEY-DATE	Transaction Date
11	2	99	WS-KEY-FORMAT	Internal Sort Code (= 14)
13	2	XX	WS-SRV-CODE	Record Format Code
15	6	9(6)	WS-SRV-DATE	Transaction Date
21	2	XX	WS-SRV-S-WORK-CTR	Work Center
23	4	9(4)	WS-SRV-S-VEH-NBR	Vehicle Number
27	4	999V9	WS-SRV-FUEL-N	Daily Fuel
31	X	X	WS-SRV-FUEL-OPR	Fuel Operator Code
32	3	99V9	WS-SRV-OIL-N	Daily Oil
35	1	X	WS-SRV-OIL-OPR	Oil Operator Code
36	2	99	WS-SRV-COOL-N	Daily Coolant
38	1	X	WS-SRV-COOL-OPR	Coolant Operator Code
39	1	9	WS-SRV-TOR-N	Daily Torque
40	1	X	WS-SRV-TOR-OPR	Torque Operator Code
41	4	X(4)	WS-SRV-TERM-ID	Terminal ID
45	14	X(14)	FILLER	
TOTAL	58			

TABLE 6.7-7

RECORD SPECIFICATION

RECORD NAME: Vehicle Assignment Record

FILE NAME: Temporary Storage Transaction File

COBOL NAME OF RECORD: WS-SRV-VEH-ASSIGN

RECORD FORMAT CODE: 19, D9

RECORD LENGTH: 58 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	4	9(4)	WS-KEY-VEH-NBR	Vehicle Number
5	6	9(6)	WS-KEY-DATE	Transaction Date
11	2	99	WS-KEY-FORMAT	Internal Sort Code (= 12, 11)
13	2	XX	WS-SRV-CODE	Record Format Code
15	6	9(6)	WS-SRV-DATE	Transaction Date
21	2	99	WS-SRV-MODEL-YR	Vehicle Model Year
23	4	9(4)	WS-SRV-S-VEH-NBR	Vehicle Number
27	4	9(4)	WS-SRV-INSP-ASG	Inspection Assigned
31	2	XX	WS-SRV-FLT-ASG	Fleet Assigned
33	2	XX	WS-SRV-DIV-ASG	Division Assigned
35	2	XX	WS-SRV-SERV-ASG	Service Assigned
37	7	9(7)	WS-SRV-ACCUM-MILES	Accumulated Miles
44	15	X(15)	FILLER	
TOTAL	58			

6.8 Temporary Storage Sorted Transaction File (M.SRTRANS)

The Temporary Storage Sorted Transaction File is a disk file. It contains converted S/U input transactions (described in Section 6.7), sorted in the proper sequence for processing by the S/U System. The sort sequence is based on the first 12 characters of the 58-character record. The sort key consists of the vehicle number, transaction date, and format code.

File and record specifications are given in Table 6.8-1.

TABLE 6.8-1

SIMS S/U FILE SPECIFICATION

FILE NAME: Temporary Storage Sorted Transaction File

FD NAME: None Used

DATA SET NAME: M.SRTRANS

NUMBER OF RECORD FORMATS: 6 RECORD SIZE: 58 Characters

FILE ORGANIZATION: Sorted on: Vehicle Number
Transaction Date
Internal Sort Code

RECORD FORMATS

FORMAT CODE	RECORD NAME	MAX. NO. PER BUS	MIN. NO. PER BUS
02	Daily Miles Record	U	0
03	Vehicle Inspection Performed Record	U	0
13	Unit Change Performed Record	U	0
15	Brake Reline Performed Record	U	0
17	Vehicle Servicing Performed Record	U	0
19,D9	Vehicle Assignment Record	U	0

PROGRAM USE

PROGRAM IDENT.	PROGRAM NAME	I/O	PROGRAM COBOL NAME FOR FILE
IERC0000	Sort Utility	W	None
DG700	Vehicle Master File Edit/Update	R	INPUT-TRANSACT

NOTE: The Record Names, Format Codes, and specifications are the same as for the Temporary Storage Transaction File, CN1510.SRV.M.TRANS (see Section 6.7).

6.9 Daily Extract File (M.DLYEXT)

The Daily Extract File is a disk file. It contains a subset of the records kept for each vehicle on the Vehicle Master File (see Section 6.1). The file contains only those records necessary to run the Commodity Report Generator program RP051. These records are: Header (20), Accumulated Miles (21), Daily Miles (24) for the report dates, Monthly Summary (26), and Inspection (29) (if one exists) records.

File and record specifications are given in Table 6.9-1.

TABLE 6.9-1

SIMS S/U FILE SPECIFICATION

FILE NAME: Daily Extract File

FD NAME: VEHICLFD

DATA SET NAME: M.DLYEXT

NUMBER OF RECORD FORMATS: 5 RECORD SIZE: 30 Characters

FILE ORGANIZATION: Records are sequenced by: Bus Number
Record Format Code
Record Date

RECORD FORMATS

FORMAT CODE	RECORD NAME	MAX. NO. PER BUS	MIN. NO. PER BUS
20	Header Record	1	1
21	Accumulated Miles Record	1	1
24	Daily Record	80	0
26	Monthly Summary Record	2	0
29	Inspection Record	1	0

PROGRAM USE

PROGRAM IDENT.	PROGRAM NAME	I/O	PROGRAM COBOL NAME FOR FILE
DG700	Vehicle Master File Edit/ Update	W	DLY-EXTRACT
RP051	Commodity Report Generator	R	MASTER-FILE

NOTE: The Record Names, Format Codes, and Specifications are the same as for the Vehicle Master File, CN1510, SRV.M.VEHICLE (See Section 6.1).

6.10 Temporary Transaction File (M.TEMPTRN)

The Temporary Transaction File is a disk file created by the Edit/Update program DG700. It contains a set of 40-character records that reflect the status of the Vehicle Master File after processing of vehicle maintenance transactions during the current run. Each record is comprised of the 30-character record from the Vehicle Master File records, and a 10-character suffix. The suffix contains service miles, the work center code, and a transaction modifier code. The transaction modifier code dictates how this transaction is to be processed during subsequent job steps.

The file contains, for each updated master file record, a matching 40-character record that shows the status of the Vehicle Master File before updating.

File and record specifications are given in Tables 6.10-1 through 6.10-10.

TABLE 6.10-1

SIMS S/U FILE SPECIFICATION

FILE NAME: Temporary Transaction File

FD NAME: None

DATA SET NAME: M.TEMPTRN

NUMBER OF RECORD FORMATS: 9 RECORD SIZE: 40 Characters

FILE ORGANIZATION: Records are sequenced by: Bus Number
Record Format Code
Record Date

RECORD FORMATS

FORMAT CODE	RECORD NAME	MAX. NO. PER BUS	MIN. NO. PER BUS
20	Header Record	1	0
26	Monthly Summary Record	3	0
27	Monthly Commodity Cost Record	3	0
29	Inspection Record	1	0
31	Unit Change Record	50	0
34	Engine Rering Record	1	0
35	Engine Overhaul Record	1	0
38	Brake Mileage Record	1	0
39	Brake Drum Record	1	0

PROGRAM USE

PROGRAM IDENT.	PROGRAM NAME	I/O	PROGRAM COBOL NAME FOR FILE
DG700	Vehicle Master File Edit/Update	W	OUT-TR-HIST
DT100	Transaction Disk File Update	R	I-EDIT-U

TABLE 6.10-2

RECORD SPECIFICATION

RECORD NAME: Header Record

FILE NAME: Temporary Transaction File

COBOL NAME OF RECORD: I-VEH-HEADER

RECORD FORMAT CODE: 20

RECORD LENGTH: 40 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-VEH-FORMAT	Record Format Code
3	4	9999	I-VEH-NO	Bus Number
7	6	9(6)	I-VEH-DATE	Date of Record
13	2	XX	I-VEH-FLEET-NBR	Fleet Number
15	2	XX	I-YR	Model Year
17	2	XX	I-SERV-CODE	Service Code
19	2	XX	I-ASSIGNMENT	Div. Assignment
21	6	9(6)	I-ASSIGN-DATE	Date of Div. Assig.
27	2	XX	I-PRIOR-DIVIS	Prior Division
29	2	XX	FILLER	
31	7	S9(7)	O-TR-SERMI	Service Miles
38	1	9	O-TR-CODE	Transaction Modifier Code
39	2	XX	O-TR-WCNTR	Work Center
TOTAL	40			

NOTE: If the record represents a deleted vehicle, I-VEH-FORMAT = "99".

TABLE 6.10-3

RECORD SPECIFICATION

RECORD NAME: Monthly Summary Record

FILE NAME: Temporary Transaction File

COBOL NAME OF RECORD: I-VEH-MONTHLY

RECORD FORMAT CODE: 26

RECORD LENGTH: 40 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-VEH-FORMAT	Record Format Code
3	4	9999	I-VEH-NO	Bus Number
7	6	9(6)	I-VEH-DATE	Date of Record
13	5	S9(5)	I-MILES-MTD	Monthly Miles
18	5	S9(4)V9	I-FUEL-MTD	Monthly Fuel
23	4	S9(3)V9	I-OIL-MTD	Monthly Oil
27	3	S999	I-COOL-MTD	Monthly Coolant
30	11	X(11)	FILLER	
TOTAL	40			

TABLE 6.10-4

RECORD SPECIFICATION

RECORD NAME: Monthly Commodity Cost Record

FILE NAME: Temporary Transaction File

COBOL NAME OF RECORD: I-VEH-MON-COST

RECORD FORMAT CODE: 27

RECORD LENGTH: 40 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-VEH-FORMAT	Record Format Code
3	4	9999	I-VEH-NO	Vehicle Number
7	6	9(6)	I-VEH-DATE	Date of Record
13	7	S9(4)v9(3)	I-FUEL-COST	Monthly Fuel Cost
20	6	S9(3)v9(3)	I-OIL-COST	Monthly Oil Cost
26	5	S99v9(3)	I-COOL-COST	Monthly Coolant Cost
31	10	X(10)	FILLER	
TOTAL	40			

TABLE 6.10-5

RECORD SPECIFICATION

RECORD NAME: Inspection Record

FILE NAME: Temporary Transaction File

COBOL NAME OF RECORD: I-VEH-INSPEC

RECORD FORMAT CODE: 29

RECORD LENGTH: 40 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-VEH-FORMAT	Record Format Code
3	4	9999	I-VEH-NO	Bus Number
7	6	9(6)	I-VEH-DATE	Date of Record
13	4	9999	I-INSP-PERFORM	Inspection Schedule and Step Performed
17	1	X	I-INSP-REASON	Reason for Inspection
18	7	S9(7)	I-INSP-ACCUM-MILES	Accumulated Miles at Inspection
25	4	9999	I-INSP-DUE	Inspection Schedule and Step Due
29	2	XX	I-INSP-DUE-TYPE	Inspection Type Due
31	7	S9(7)	O-TR-SERMI	Service Miles
38	1	9	O-TR-CODE	Transaction Modifier Code
39	2	XX	O-TR-WCNTR	Work Center
TOTAL	40			

TABLE 6.10-6

RECORD SPECIFICATION

RECORD NAME: Unit Change Record

FILE NAME: Temporary Transaction File

COBOL NAME OF RECORD: I-VEH-UNIT-CHG

RECORD FORMAT CODE: 31

RECORD LENGTH: 40 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-VEH-FORMAT	Record Format Code
3	4	9999	I-VEH-NO	Bus Number
7	6	9(6)	I-VEH-DATE	Date of Record
13	4	9999	I-GRP-UNIT-CODE	Group-Unit Code of Unit Changed
17	1	X	I-CHG-REASON	Reason for Unit Change
18	7	S9(7)	I-UNIT-CHG-MILES	Accumulated Miles at Change
25	6	X(6)	FILLER	
31	7	S9(7)	O-TR-SERMI	Service Miles
38	1	9	O-TR-CODE	Transaction Modifier Code
39	2	XX	O-TR-WCNTR	Work Center
TOTAL	40			

TABLE 6.10-7

RECORD SPECIFICATION

RECORD NAME: Engine Rering Record

FILE NAME: Temporary Transaction File

COBOL NAME OF RECORD: I-VEH-RERING

RECORD FORMAT CODE: 34

RECORD LENGTH: 40 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-VEH-FORMAT	Record Format Code
3	4	9999	I-VEH-NO	Bus Number
7	6	9(6)	I-VEH-DATE	Date of Record
13	1	X	I-RERING-REASON	Reason for Rering Job
14	7	S9(7)	I-RERING-MILES	Accumulated Miles at Rering
21	10	X(10)	FILLER	
31	7	S9(7)	O-TR-SERMI	Service Miles
38	1	9	O-TR-CODE	Transaction Modifier Code
39	2	XX	O-TR-WCNTR	Work Center
TOTAL	40			

TABLE 6.10-8

RECORD SPECIFICATION

RECORD NAME: Engine Overhaul Record

FILE NAME: Temporary Transaction File

COBOL NAME OF RECORD: I-VEH-ENG-OVERHAUL

RECORD FORMAT CODE: 35

RECORD LENGTH: 40 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-VEH-FORMAT	Record Format Code
3	4	9999	I-VEH-NO	Bus Number
7	6	9(6)	I-VEH-DATE	Date of Record
13	1	X	I-OVHAUL-REASON	Reason for Eng Overhaul
14	7	S9(7)	I-OVHAUL-MILES	Accumulated Miles at Eng Overhaul
21	10	X(10)	FILLER	
31	7	S9(7)	O-TR-SERMI	Service Miles
38	1	9	O-TR-CODE	Transaction Modifier Code
39	2	XX	O-TR-WCNTR	Work Center
TOTAL	40			

TABLE 6.10-9

RECORD SPECIFICATION

RECORD NAME: Brake Mileage Record

FILE NAME: Temporary Transaction File

COBOL NAME OF RECORD: I-VEH-BRAKE-MILE

RECORD FORMAT CODE: 38

RECORD LENGTH: 40 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-VEH-FORMAT	Record Format Code
3	4	9999	I-VEh-NO	Bus Number
7	6	9(6)	I-VEH-DATE	Date of Record
13	1	X	I-BRAKE-REAS	Reason for Brake Job
14	7	S9(7)	I-BRAKE-MILES	Accumulated Miles at Brake Job
21	4	XXXX	I-BRAKE-LINING	Brake Lining Code
25	6	X(6)	FILLER	
31	7	S9(7)	O-TR-SERMI	Service Miles
38	1	9	O-TR-CODE	Transaction Modifier Code
39	2	XX	O-TR-WCNTR	Work Center
TOTAL	40			

TABLE 6.10-10

RECORD SPECIFICATION

RECORD NAME: Brake Drum Record

FILE NAME: Temporary Transaction File

COBOL NAME OF RECORD: I-VEH-BRAKE-DRUM

RECORD FORMAT CODE: 39

RECORD LENGTH: 40 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	I-VEH-FORMAT	Record Format Code
3	4	9999	I-VEH-NO	Bus Number
7	6	9(6)	I-VEH-DATE	Date of Record
13	3	999	I-LF-DRUM	Left Front Drum Size
16	3	999	I-RF-DRUM	Right Front Drum Size
19	3	999	I-LR-DRUM	Left Rear Drum Size
22	3	999	I-RR-DRUM	Right Rear Drum Size
25	6	X(6)	FILLER	
31	7	S9(7)	O-TR-SERMI	Service Miles
38	1	9	O-TR-CODE	Transaction Modifier Code
39	2	XX	O-TR-WCNTR	Work Center
TOTAL	40			

NOTE: If only a partial brake job, the field O-TR-SERMI will contain accumulated miles at the partial job.

6.11 Monthly Transaction File (M.MONTRAN( ))

The Monthly Transaction File is a disk file. It contains the vehicle maintenance transactions that have been processed during the current month. Each record is 46 characters in length. The record is a reformat of a record from the Temporary Transaction File (see Section 6.10).

The Monthly Transaction File is a generation data set. Three versions are kept on disk at all times. The versions represent the status of this file as of the completion of the three most recent S/U System runs.

File and record specifications are given in Tables 6.11-1 through 6.11-9.

TABLE 6.11-1

SIMS S/U FILE SPECIFICATION

FILE NAME: Monthly Transaction File

FD NAME: TRHISTFD

DATA SET NAME: M.MONTRAN ( )

NUMBER OF RECORD FORMATS: 8 RECORD SIZE: 46 Characters

FILE ORGANIZATION: Sequenced by: Processing Date
Vehicle Number
Record Format Code
Transaction Date

RECORD FORMATS

FORMAT CODE	RECORD NAME	MAX. NO. PER BUS	MIN. NO. PER BUS
26	Monthly Summary Record	3	Ø
27	Monthly Commodity Cost Record	3	Ø
29	Inspection Record	U	Ø
31	Units Change Record	U	Ø
34	Engine Rering Record	U	Ø
35	Engine Overhaul Record	U	Ø
38	Brake Mileage Record	U	Ø
39	Brake Drum Record	U	Ø

PROGRAM USE

PROGRAM IDENT.	PROGRAM NAME	I/O	PROGRAM COBOL NAME FOR FILE
DT1ØØ	Transaction Disk File Update	R	OLD-TRH
DT1ØØ	Transaction Disk File Update	W	O-FILE
DT2ØØ	Transaction Master File Update	R	OLD-TF-FILE

TABLE 6.11-2

RECORD SPECIFICATION

RECORD NAME: Monthly Summary Record

FILE NAME: Monthly Transaction File

COBOL NAME OF RECORD: I-TRH-MON-QTY

RECORD FORMAT CODE: 26

RECORD LENGTH: 46 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	4	9(4)	I-TRH-VEH-NBR	Vehicle Number
5	2	99	I-TRH-FOR-CDE	Record Format Code
7	6	9(6)	I-TRH-DATE	Transaction Date
13	4	X(4)	FILLER	
17	6	9(6)	I-TRH-PROC-DATE	Processing Date
23	3	XXX	FILLER	
26	5	S9(5)	I-TRH-MON-MI	Monthly Miles
31	1	X	FILLER	
32	5	S9(4)V9	I-TRH-MON-FUEL	Monthly Fuel
37	2	XX	FILLER	
39	4	S9(3)V9	I-TRH-MON-OIL	Monthly Oil
43	1	X	FILLER	
44	3	S999	I-TRH-MON-COOL	Monthly Coolant
TOTAL	46			

TABLE 6.11-3

RECORD SPECIFICATION

RECORD NAME: Monthly Commodity Cost Record

FILE NAME: Monthly Transaction File

COBOL NAME OF RECORD: I-TRH-MON-COST

RECORD FORMAT CODE: 27

RECORD LENGTH: 46 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	23	X(23)	FILLER	Reference Record Code 26
24	7	S9(4)V999	I-TRH-FUEL-COST	Cost of fuel used for month
31	6	S999V999	I-TRH-OIL-COST	Cost of oil used for month
37	1	X	FILLER	
38	5	S99V999	I-TRH-COOL-COST	Cost of coolant used for month
43	4	XXXX	FILLER	
TOTAL	46			

TABLE 6.11-4

RECORD SPECIFICATION

RECORD NAME: Inspection Record

FILE NAME: Monthly Transaction File

COBOL NAME OF RECORD: I-TRH-INSP-PER

RECORD FORMAT CODE: 29

RECORD LENGTH: 46 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	12	X(12)	FILLER	Reference Record Code 26
13	4	9(4)	I-TRH-INSP	Inspection performed
17	6	9(6)	I-TRH-PROC-DATE	Processing Date
23	1	X	I-TRH-REASON	Reason Code
24	7	S9(7)	I-TRH-ACC-MILES	Accumulated miles at Inspection
31	6	S9(6)	I-TRH-SERV-MILES	Service Miles
37	7	X(7)	FILLER	
44	1	9	I-TRH-TRAN-CODE	Action Code
45	2	XX	I-TRH-WORK-CTR	Work Center
TOTAL	46			

TABLE 6.11-3

RECORD SPECIFICATION

RECORD NAME: Monthly Commodity Cost Record

FILE NAME: Monthly Transaction File

COBOL NAME OF RECORD: I-TRH-MON-COST

RECORD FORMAT CODE: 27

RECORD LENGTH: 46 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	23	X(23)	FILLER	Reference Record Code 26
24	7	S9(4)V999	I-TRH-FUEL-COST	Cost of fuel used for month
31	6	S999V999	I-TRH-OIL-COST	Cost of oil used for month
37	1	X	FILLER	
38	5	S99V999	I-TRH-COOL-COST	Cost of coolant used for month
43	4	XXXX	FILLER	
TOTAL	46			

TABLE 6.11-4

RECORD SPECIFICATION

RECORD NAME: Inspection Record

FILE NAME: Monthly Transaction File

COBOL NAME OF RECORD: I-TRH-INSP-PER

RECORD FORMAT CODE: 29

RECORD LENGTH: 46 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	12	X(12)	FILLER	Reference Record Code 26
13	4	9(4)	I-TRH-INSP	Inspection performed
17	6	9(6)	I-TRH-PROC-DATE	Processing Date
23	1	X	I-TRH-REASON	Reason Code
24	7	S9(7)	I-TRH-ACC-MILES	Accumulated miles at Inspection
31	6	S9(6)	I-TRH-SERV-MILES	Service Miles
37	7	X(7)	FILLER	
44	1	9	I-TRH-TRAN-CODE	Action Code
45	2	XX	I-TRH-WORK-CTR	Work Center
TOTAL	46			

TABLE 6.11-5

RECORD SPECIFICATION

RECORD NAME: Unit Change Record

FILE NAME: Monthly Transaction File

COBOL NAME OF RECORD: I-TRH-UNIT-CHG

RECORD FORMAT CODE: 31

RECORD LENGTH: 46 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	12	X(12)	FILLER	Reference Record Code 26
13	4	9(4)	I-TRH-UNIT-ID	Group/Unit Code
17	6	9(6)	I-TRH-PROC-DATE	Processing Date
23	24	X(24)	FILLER	Reference Record Code 29
TOTAL	46			

TABLE 6.11-6

RECORD SPECIFICATION

RECORD NAME: Engine Rering Record

FILE NAME: Monthly Transaction File

COBOL NAME OF RECORD: I-TRH-RR-OVH

RECORD FORMAT CODE: 34

RECORD LENGTH: 46 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	46	X(46)	FILLER	Reference Record Code 31
TOTAL	46			

TABLE 6.11-7

RECORD SPECIFICATION

RECORD NAME: Engine Overhaul Record

FILE NAME: Monthly Transaction File

COBOL NAME OF RECORD: I-TRH-RR-OVH

RECORD FORMAT CODE: 35

RECORD LENGTH: 46 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	46	X(46)	FILLER	Reference Record Code 31
TOTAL	46			

TABLE 6.11-8

RECORD SPECIFICATION

RECORD NAME: Brake Mileage Record

FILE NAME: Monthly Transaction File

COBOL NAME OF RECORD: I-TRH-BRK-MILE

RECORD FORMAT CODE: 38

RECORD LENGTH: 46 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	12	X(12)	FILLER	Reference Record Code 26
13	4	X(4)	FILLER	Zeros
17	30	X(30)	FILLER	Reference Record Code 31
TOTAL	46			

TABLE 6.11-9

RECORD SPECIFICATION

RECORD NAME: Brake Drum Record

FILE NAME: Monthly Transaction File

COBOL NAME OF RECORD: I-TRH-BRK-DRUM

RECORD FORMAT CODE: 39

RECORD LENGTH: 46 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	24	X(24)	FILLER	Reference Records Code 26
25	3	999	I-TRH-LF-SIZE	Left front drum size
28	3	999	I-TRH-RF-SIZE	Right front drum size
31	3	999	I-TRH-LR-SIZE	Left rear drum size
34	3	999	I-TRH-RR-SIZE	Right rear drum size
37	7	S9(7)	I-TRH-BRK-ACC-MI	Accumulated miles for partial job
44	3	XXX	FILLER	
TOTAL	46			

6.12 Transaction Master File (M.TRANTAPE( ))

The Transaction Master File is a tape file. It contains a complete history of all vehicle maintenance transactions processed by the S/U System. The record formats are identical to those of the Monthly Transaction File (see Section 6.11).

The Transaction Master File is a generation data set. Three versions are saved on tapes at all times. These versions are the status of this file as of the three most recent executions of the Transaction Master File Update program DT200. This program is normally run on a monthly basis. It copies the contents of the Monthly Transaction File to the Transaction Master File, creating a new generation of this file.

File and record specifications are given in Table 6.12-1.

TABLE 6.12-1

SIMS S/U FILE SPECIFICATIONS

FILE NAME: Transaction Master File

FD NAME: TRHISTFD

DATA SET NAME: M.TRANTAPE ( )

NUMBER OF FORMATS: 8 RECORD SIZE: 46 Characters

FILE ORGANIZATION: Sequenced by Bus Number
Record Format Code
Transaction Date
Group-Unit Code, if any
Processing Date

RECORD FORMATS

FORMAT CODE	RECORD NAME	MAX. NO. PER BUS	MIN. NO. PER BUS
26	Monthly Summary Record	U	Ø
27	Monthly Commodity Cost Record	U	Ø
29	Inspection Performed Record	U	Ø
31	Unit Changed Record	U	Ø
34	Engine Rering Record	U	Ø
35	Engine Overhaul Record	U	Ø
38	Brake Mileage Record	U	Ø
39	Brake Drum Record	U	Ø

PROGRAM USE

PROGRAM IDENT.	PROGRAM NAME	I/O	PROGRAM COBOL NAME FOR FILE
DT2ØØ	Transaction Master File Update	R	OLD-TMF-FILE
DT2ØØ	Transaction Master File Update	W	NEW-TMF-FILE
RP058	Units Changed Report Generator	R	I-TRANS-FILE
RP064	Coach History Report Generator	R	TRAN-FILE

Note: The Record Specifications are the same as for the Monthly Transaction File, M.MONTRAN( ).

6.13 Request Date File (S.DATE)

The Request Date File is a disk file created through the execution of IBM utility program IEBGENER. It contains card-image records of the report request cards supplied by the user. Each of the report generator programs reads this file to determine the date for the report, and the report option specified, if any.

File and record specifications are given in Tables 6.13-1 and 6.13-2.

TABLE 6.13-1

SIMS S/U FILE SPECIFICATION

FILE NAME: Request Date File

FD NAME: DATEFD

DATA SET NAME: S.DATE

NUMBER OF RECORD FORMATS: 1 RECORD SIZE: 60 Characters

FILE ORGANIZATION: Records are in random order.

RECORD FORMATS

FORMAT CODE	RECORD NAME	MAX NO. IN FILE	MIN. NO. IN FILE
	Date Record	U	0

PROGRAM USE

PROGRAM IDENT.	PROGRAM NAME	I/O	PROGRAM COBOL NAME FOR FILE
IEBGENER	Data Set Copy Utility	W	
DG700	Vehicle Master File Edit/Update	R	INPUT-DATE-FILE
RP051A(& D)	Commodity Report Generator	R	DATE-FILE
RP053	Commodity Usage Report Generator	R	DATE-FILE
RP054	Bus Analysis Report Generator	R	DATE-FILE
RP055	Unit Change Candidate Report Generator	R	DATE-FILE
RP056	Brake Status Report Generator	R	DATE-FILE
RP057	Monthly Tire Mileage Processor	R	DATE-FILE
RP058	Units Changed Report Generator	R	INPUT-DATE-FILE
RP059	Unit Status Report Generator	R	DATE-FILE
RP064	Coach History Report Generator	R	DATE-FILE
RP066	Inspection Planning Report Generator	R	DATE-FILE

TABLE 6.13-2

RECORD SPECIFICATION

RECORD NAME: Date Record

FILE NAME: Request Date File

COBOL NAME OF RECORD: DATE-REC

RECORD FORMAT CODE: None

RECORD LENGTH: 60 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	D-REPORT-NO	Report Request Code (see Table 4.3-1)
3	6	9(6)	D-DATE	Report Request Date (YYMMDD)
9	2	XX	D-OPER-CODE	Report Option Code (see Table 4.3-2)
11	50	X(50)	FILLER	
TOTAL	60			

NOTE: If Report Option Code contains zeros or spaces, the standard report is generated.

6.14 Service System Control File (S.CTL)

The Service System Control File is a partitioned data set residing on disk. The various partition members contain card images of control cards necessary to execute the IBM utility programs employed by the system. The utilities used are IEBGENER (Data Set Copy), IERRCØØØ (Sort/Merge), and IEHDASDR (Disk Save).

File and record specifications are given in Table 6.14-1.

TABLE 6.14-1

SIMS S/U FILE SPECIFICATION

FILE NAME: Service System Control File

DATA SET NAME: S.CTL

NUMBER OF MEMBERS: 3 RECORD SIZE: 80 Characters

FILE ORGANIZATION: S.CTL is a partitioned data set that contains card images of control cards necessary to execute IBM utilities IEBGENER, IERRCØØØ, and IEHDASDR. The file is accessed by specifying the member name containing the desired control cards.

MEMBER NAMES	CONTENTS
CTLDATE	Two card images as follows: GENERATE MAXFLDS=1 RECORD FIELD=(60,1,,1)
CTLSRVØ3	One card image as follows: SORT FIELDS=(1,12,CH,A),SIZE=E500
CTLBKUP	One card image as follows: DUMP FROMDD=DISK,TODD=TAPE

Note: All card images have their contents beginning in column three (3) of the 80 character image.

PROGRAM USE

PROGRAM IDENT.	MEMBER USED	I/O	PROGRAM PURPOSE
IEBGENER	CTLDATE	R	Copy date cards to Request Date file
IERRCØØØ	CTLSRVØ3	R	Sort transaction file M.TRANS
IEHDASDR	CTLBKUP	R	Dump S/U disk, TMDISK, to magnetic tape

6.15 Request Date Card File (DATECD)

The Request Date Card File is a set of records read through the job stream on punched cards. These records are user-supplied request cards for various report generator programs. This file is used as input to utility program IEBGENER, which creates the Request Date File (see Section 6.14).

File and record specifications are given in Tables 6.15-1 and 6.15-2.

TABLE 6.15-1

SIMS S/U FILE SPECIFICATION

FILE NAME: Request Date Card File

DATA SET NAME: DATECD

NUMBER OF FORMATS: 1 RECORD SIZE: 80 Characters

FILE ORGANIZATION: Random order

RECORD FORMATS

FORMAT CODE	RECORD NAME	MAX. NO.	MIN. NO.
	Date Card	U	Ø

PROGRAM USE

PROGRAM IDENT.	PROGRAM NAME	I/O	PROGRAM COBOL NAME FOR FILE
IEBGENER	Data Set Copy Utility	I	None

TABLE 6.15-2

RECORD SPECIFICATION

RECORD NAME: Date Card

FILE NAME: Request Date Card File

COBOL NAME OF RECORD: None

RECORD FORMAT CODE: None

RECORD LENGTH: 80 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	D-REPORT-NO	Report Request Code (see Table 4.3-1)
3	6	9(6)	D-DATE	Report Request Date (YYMMDD)
9	2	XX	D-OPER-CODE	Report Option Code (see Table 4.3-2)
11	70	X(70)	FILLER	
TOTAL	80			

NOTE: If Report Option Code contains zero or spaces, the standard report is generated.

6.16 Card Input File (TRANCD)

The Card Input File is a set of records read through the job stream on punched cards. The records are the 80-character user-supplied vehicle transactions and the constants file update transactions.

File and record specifications are given in Table 6.16-1.

TABLE 6.16-1

SIMS S/U FILE SPECIFICATION

FILE NAME: Card Input File

FD NAME: SRVTRAN

DATA SET NAME: TRANCD

NUMBER OF FORMATS: 11 RECORD SIZE: 80 Characters

FILE ORGANIZATION: Random order

RECORD FORMATS

TRANSACTION CODE	RECORD NAME	MAX. NO. PER BUS	MIN. NO. PER BUS
02	Daily Miles Record	U	Ø
03	Vehicle Inspection Performed Record	U	Ø
13	Unit Change Performed Record	U	Ø
15	Brake Reline Performed Record	U	Ø
17	Vehicle Servicing Performed Record	U	Ø
19,D9	Vehicle Assignment Record	U	Ø
C1	Service System Constants Record	U	Ø
C5,D5	Inspection Schedule Definition Record	U	Ø
F1	Fleet Constants and Limits Record	U	Ø
U1	Vehicle Group Unit Description Record	U	Ø
T1,DT	Unit Threshold Record	U	Ø

PROGRAM USE

PROGRAM IDENT.	PROGRAM NAME	I/O	PROGRAM COBOL NAME FOR FILE
DA600	Data Acceptance	R	INPUT-CARD-TRAN

Note: The Record Names Transaction Codes and Specifications are the same as for the Daily Transaction File, M.TRTAPE.

6.17 ACTD Tape Input File (DATA)

The ACTD Tape Input File is a tape file. It contains 80-character records produced by service data collectors. The record formats are specific to the data collectors used at ACTD. These records contain servicing information reflecting fuel, oil, and coolant dispensed for vehicles in the system.

File and record specifications are given in Tables 6.17-1 and 6.17-2.

TABLE 6.17-1

SIMS S/U FILE SPECIFICATION

FILE NAME: ACTD Tape Input File

DATA SET NAME: DATA

NUMBER OF FORMATS: 1 RECORD SIZE: 80 Characters

FILE ORGANIZATION: Sequenced by: Julian Date
Time of Day

RECORD FORMATS

FORMAT CODE	RECORD NAME	MAX. NO. PER BUS	MIN. NO. PER BUS
	ACTD Data Collector Record	U	Ø

PROGRAM USE

PROGRAM IDENT.	PROGRAM NAME	I/O	PROGRAM COBOL NAME OF FILE
ACTAPE	ACTD Data Collector Tape Processor	R	INTAPE

TABLE 6.17-2

RECORD SPECIFICATION

RECORD NAME: ACTD Data Collector Record

FILE NAME: ACTD Tape Input File

COBOL NAME OF RECORD: INREC

RECORD LENGTH: 80 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	3	999	JULIAN-IN	Julian Date
4	4	9(4)	TIME-IN	Time of Day of record
8	1	9	IN-DIV	Division Code
9	1	9	IN-COLTR	Data Collector Code
10	1	X	FILLER	
11	3	XXX	TERM-ID	Terminal ID
14	2	XX	FILLER	
16	4	X(4)	BUS-NBR	Vehicle Number
20	13	X(13)	FILLER	
33	4	999V9	IN-FUEL	Daily Fuel
37	2	9V9	IN-OIL	Daily Oil
39	2	99	IN-COOL	Daily Coolant
41	1	9	IN-TORQUE	Daily Torque fluid
42	10	X(10)	FILLER	
52	3	XXX	IN-CHECK-CODE	Valid Record Indicator
55	26	X(26)	FILLER	
TOTAL	80			

6.18 DTS Tape Input File (MAGTAPE)

The DTS Tape Input File is a magnetic tape file. It contains three classes of records: the regular S/U System input transactions, Date/Signal records, and DTS service data collector records. The Date/Signal records separate the various kinds of input data on the file. The service data collector records contain servicing performed data--i.e., fuel, oil, and coolant dispensed--for the vehicles in the system.

The data collector records are coded in the ASCII character set. The system translates them to EBCDIC before processing.

File and record specifications are given in Tables 6.18-1 through 6.18-3.

TABLE 6.18-1

SIMS S/U FILE SPECIFICATION

FILE NAME: DTS Tape Input File

FD NAME: SRVTRAN

DATA SET NAME: MAGTAPE

NUMBER OF RECORD FORMATS: 13 RECORD SIZE: 80 Characters

FILE ORGANIZATION: Random Order

RECORD FORMATS

TRANSACTION CODE	RECORD NAME	MAX. NO. PER FILE	MIN. NO. PER FILE
02	Daily Miles Record	U	0
03	Inspection Performed Record	U	0
13	Unit Change Performed Record	U	0
15	Brake Job Record	U	0
17	Servicing Performed Record	U	0
19,D9	Vehicle Assignment Record	U	0
C1	Service System Constants Record	U	0
C5,D5	Inspection Schedule Record	U	0
F1	Fleet Constants and Limits Record	U	0
T1,DT	Unit Threshold Record	U	0
U1	Vehicle Group-Unit Description Record	U	0
A1	Service Data Collector Record	U	0
01	Date/Signal Record	2	1

PROGRAM USE

PROGRAM IDENT.	PROGRAM NAME	I/O	PROGRAM COBOL NAME FOR FILE
IEBGENER	Tape to Disk Utility	R	None

NOTE: The Record Names, Formats, and Specifications are the same as for M.TRTAPE, the Daily Transaction File, except for Service Data Collector Record (Transaction Code = A1), and the Date/Signal Record. These are defined in Tables 6.18-2 and 6.18-3.

TABLE 6.18-2

RECORD SPECIFICATION

RECORD NAME: Service Data Collector Record

FILE NAME: DTS Tape Input File

COBOL NAME OF RECORD: WS-DATA-COLTR

RECORD FORMAT CODE: A1

RECORD LENGTH: 52 Characters (see Note below)

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	1	X	FILLER	
2	2	XX	FILLER	'A1'
4	1	X	FILLER	
5	3	999	DC-BUS	Vehicle Number
8	13	X(13)	FILLER	
21	4	999V9	DC-FUEL	Daily Fuel
25	2	9V9	DC-OIL	Daily Oil
27	2	99	DC-COOL	Daily Coolant
29	1	9	DC-TORQUE	Daily Torque
30	13	X(13)	FILLER	
43	2	XX	DC-WORK	Work Center
45	4	XXXX	DC-TERM	Terminal ID
49	3	XXX	FILLER	
52	1	X	FILLER	'Z'
TOTAL	52			

NOTE: The 52-character record is stored as an 80-character record. The characters are in ASCII, necessitating translation.

TABLE 6.18-3

RECORD SPECIFICATION

RECORD NAME: Date/Signal Record

FILE NAME: DTS Tape Input File

COBOL NAME OF RECORD: I-DTE-HDR

RECORD FORMAT CODE: 01

RECORD LENGTH: 9 Characters (see Note 1 below)

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	99	I-FORMAT-DTE	Format Code
3	6	9(6)	I-DTE	Transaction Date
9	1	9	I-SIGNAL	Signal Code (see Note 2)

NOTE 1: The 9-character record is stored as an 80-character record.

NOTE 2: The signal code is used:

VALUE	DESCRIPTION
1	Records that follow are data collector records generated by a Mohawk 1105 keytape unit.
2	Records that follow are non-data collector records generated by a Mohawk 1105 keytape unit.
3	Records that follow are data collector records generated by a Mohawk 6405 keytape unit.
4	Records that follow are non-data collector records generated by a Mohawk keytape unit.
5.	Records that follow are card-image records.

6.19 DTS Temporary Disk File (DAILYTRN)

The DTS Temporary Disk File is a disk file created by utility program IEBGENER. At DTS, all data input to the system come from the DTS Tape Input File (see Section 6.18). One of these tape files is submitted for each day's transactions. To allow the processing of one or more of these tape inputs on an S/U System run, the tapes are copied to disk data set DAILYTRN. This one input source becomes the system input for the run.

File and record specifications are given in Table 6.19-1.

TABLE 6.19-1

SIMS S/U FILE SPECIFICATION

FILE NAME: DTS Temporary Disk File

FD NAME: SRVTRAN

DATA SET NAME: DAILYTRN

NUMBER OF RECORD FORMATS: 13 RECORD SIZE: 80 Characters

FILE ORDER: Random order

RECORD FORMATS

TRANSACTION CODE	RECORD NAME	MAX. NO. PER FILE	MIN. NO. PER FILE
02	Daily Miles Record	U	Ø
03	Inspection Performed Record	U	Ø
13	Unit Change Performed Record	U	Ø
15	Brake Job Record	U	Ø
17	Servicing Performed Record	U	Ø
19,D9	Vehicle Assignment Record	U	Ø
C1	Service System Constants Record	U	Ø
C5,D5	Inspection Schedule Record	U	Ø
F1	Fleet Constants and Limits Record	U	Ø
T1,DT	Unit Threshold Record	U	Ø
U1	Vehicle Group-Unit Description Record.	U	Ø
A1	Service Data Collector Record	U	Ø
Ø1	Date/Signal Record	2	1

PROGRAM USE

PROGRAM IDENT.	PROGRAM NAME	I/O	PROGRAM COBOL NAME FOR FILE
DTTAPE	DTS Data Collector Tape Processor	R	ALLINPUT
IEBGENER	Tape to Disk Utility	W	None

Note: The Record Names, Formats, and Specifications are the same as for MAGTAPE, the DTS Tape Input File.

6.20 Monthly Tire Mileage File (M.MILECARD)

The Monthly Tire Mileage File is a disk file. It contains a set of daily mileage records covering a one-month period for each vehicle in the system. This file is specific to DTS. The contents are used to generate a report that assists maintenance management to monitor tire mileage by vehicle.

File and record specifications are given in Tables 6.20-1 and 6.20-2.

TABLE 6.20-1

SIMS S/U FILE SPECIFICATION

FILE NAME: Monthly Tire Mileage File

FD NAME: None

DATA SET NAME: M.MILECARD

NUMBER OF RECORD FORMATS: 1 RECORD SIZE: 25 Characters

FILE ORGANIZATION: Records are sequenced by bus number and date.

RECORD FORMATS:

FORMAT CODE	RECORD NAME	MAX. NO. PER BUS	MIN. NO. PER BUS
	Mileage Card	31	0

PROGRAM USE

PROGRAM IDENT.	PROGRAM NAME	I/O	PROGRAM COBOL NAME FOR FILE
RP057	Monthly Tire Mileage Processor	W	PUNCH-FILE
PRTMIL	Tire Mileage Report Generator	R	IN-FILE

TABLE 6.20-2

RECORD SPECIFICATION

RECORD NAME: Mileage Card

FILE NAME: Monthly Tire Mileage File

COBOL NAME OF RECORD: PUNCH-LINE

RECORD LENGTH: 25 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	6	X(6)	FILLER	
7	2	99	O-MO	Mileage Date - Month
9	2	99	O-DAY	Mileage Date - Day
11	2	99	O-YR	Mileage Date - Year
13	2	99	FILLER	
15	4	9999	O-VEH-NO	Bus Number
19	6	9(6)	O-MILES	Daily Miles
25	1	X	O-SIGN	Mileage Sign
TOTAL	25			

6.21 Tire Mileage Punch File (SYSOUT=B)

The Tire Mileage Punch File is a file of punched cards output to the system punch. It contains 80-character daily mileage records for a one-month period for each vehicle in the system. The format of the cards is compatible with the input requirements of the DTS tire mileage monitoring system.

File and record specifications are given in Tables 6.21-1 and 6.21-2.

TABLE 6.21-1

SIMS S/U FILE SPECIFICATION

FILE NAME: Tire Mileage Punch File

FD NAME: None

DATA SET NAME: Card Punch (SYSOUT = B)

NUMBER OF FORMATS: 1 RECORD SIZE: 80 Characters

FILE ORGANIZATION: Sequenced by: Vehicle Number
Date

RECORD FORMATS

FORMAT CODE	RECORD NAME	MAX. NO. PER BUS	MIN. NO. PER BUS
	Punch Line	31	0

PROGRAM USE

PROGRAM IDENT.	PROGRAM NAME	I/O	PROGRAM COBOL NAME FOR FILE
PRTMIL	Tire Mileage Report Generator	W	PUNCH-FILE

TABLE 6.21-2

RECORD SPECIFICATION

RECORD NAME: Punch Line Record

FILE NAME: Tire Mileage Punch File

COBOL NAME OF RECORD: PUNCH-LINE

RECORD FORMAT CODE: None

RECORD LENGTH: 80 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	6	9(6)	FILLER (= 000003)	
7	2	99	I-MO	Month
9	2	99	I-DAY	Day
11	2	99	I-YR	Year
13	2	XX	FILLER	
15	4	9(4)	I-VEH-NO	Vehicle Number
19	6	9(6)	I-MILES	Daily Miles
25	1	X	I-SIGN	Mileage Sign
26	55	X(55)	FILLER	
TOTAL	80			

6.22 ASCII Translation File (S.DTPARM)

The ASCII Translation File is a disk file. It contains 80-character records defining translation tables for conversion of ASCII characters to EBCDIC. This file is used by the DTS Input Tape Processor program DTTAPE to translate records from the DTS service data collectors.

Tables 6.22-1 through 6.22-4 provide file and record specification for this file. Table 6.22-5 is a listing of the contents of the ASCII Translation File as currently used by DTS.

TABLE 6.22-1

SIMS S/U FILE SPECIFICATION

FILE NAME: ASCII Translation File

FD NAME: None

DATA SET NAME: S.DTPARM

NUMBER OF FORMATS: 3 RECORD SIZE: 80 Characters

RECORD FORMATS

FORMAT CODE	RECORD NAME	MAX. NO.	MIN. NO.
1	Input Source Record	5	5
2	Record Type Specification Record	99	1
5	Translation Table	99	1

PROGRAM USE

PROGRAM IDENT.	PROGRAM NAME	I/O	PROGRAM COBOL NAME FOR FILE
DTTAPE	DTS Input Tape Processor	R	PARMFILE

REMARKS

Table 6.22-5 is a listing of the current ASCII Translation File. This file is used only at DTS.

TABLE 6.22-2

RECORD SPECIFICATION

RECORD NAME: Input Source Record

FILE NAME: ASCII Translation File

COBOL NAME OF RECORD: None

RECORD FORMAT CODE: 1

RECORD LENGTH: 80 Characters

FIELD POS.	FIELD LENG.	FORMAT	FIELD DESCRIPTION
1	1	9	Format Code (= 1)
2	27	X(27)	Filler
29	1	9	Sequence Number
30	2	XX	Filler
32	1	X	Translation Code (Note 1)
33	1	X	Filler
34	2	99	Record Size of Valid Record
36	1	X	Valid Record Trailer Character
37	42	X(42)	Name of Input Source
79	2	99	Input Source Number (Note 2)
TOTAL	80		

NOTE 1: A 'T' coded in this field means that a translate table follows for this source. A blank means that the source does not require translation.

NOTE 2: This value corresponds to the source number specified on the date/signal records that divide input sources. Values 01, 02, and 03 designate input sources that must be translated. Codes 04 and 05 are untranslated sources.

At DTS, only sources 03, Data Collector 9-track tape; 04, Keytaped Data 9-track tape; and 05, Card Input, are being used.

TABLE 6.22-3

RECORD SPECIFICATION

RECORD NAME: Record Type Specification

FILE NAME: ASCII Translation File

COBOL NAME OF RECORD: None

RECORD FORMAT CODE: 2

RECORD LENGTH: 80 Characters

FIELD POS.	FIELD LENG.	FORMAT	FIELD DESCRIPTION
1	1	9	Format Code (= 2)
2	7	X(7)	Filler
9	2	XX	Transaction Type (Note 1)
11	12	99	Sequence Number
13	27	X(27)	Filler
40	21	X(20)	Transaction Name
61	20	X(20)	Filler
TOTAL	80		

NOTE 1: As shown in Table 6.22-5, file S.DTPARM has 11 transaction types specified. The only one used in the current S/U system is Transaction 'A1', the service data collector record.

TABLE 6.22-4

RECORD SPECIFICATION

RECORD NAME: Translation Table

FILE NAME: ASCII Translation File

COBOL NAME OF RECORD: None

RECORD FORMAT CODE: 5

RECORD LENGTH: 80 Characters

FIELD POS.	FIELD LENG.	FORMAT	FIELD DESCRIPTION
1	1	9	Format Code (= 5)
2	9	X(9)	Filler
11	2	99	Input Source to be Translated (Note 1)
13	2	XX	Filler
15	64	X(64)	Translation Table
79	2	99	Sequence Number (Note 2)
TOTAL	80		

NOTE 1: This field contains an identifier that designates to which input source this translation table belongs. The values correspond to values found in columns 79-80 in the Input Source Records. At DTS, only translate table 03 is being used.

NOTE 2: Four cards are present for each translate table. They are sequenced 01, 02, 03, and 04.

```
1        00              101TP51Z    DATA COLLECTOR (7 TRACK TAPE)          01
1        00              201T        KEYTAPED DATA (7 TRACK TAPE)           02
1        00              301TP51Z    DATA COLLECTOR (9 TRACK TAPE)          03
1        00              401         KEYTAPED DATA (9 TRACK TAPE)           04
1        00              501               DATA CARD INPUT                  05
2      A101                   P     SERVICE                                01
2      0202                         MILEAGE FORMAT B                       01
2      0303                         MILEAGE FORMAT A                       01
2      0404                         INSPECTION PERFORMED                   01
2      0505                         DIVISION REASSGN.                      01
2      0606                         INSP. SCHED. REASSG                    01
2      0707                         NEW VEHICLE FORMAT                     01
2      0808                         MANUAL FUELING                         01
2      0909                         FUEL ADJUSTMENT                        01
2      1010                         OIL ADJUSTMENT                         01
2      1111                         COOLANT ADJUSTMENT                     01
5        01  $$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$01
5        01   $$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$1$$$$$$$$$$$$$$$$$$$$$$$0$$$$$02
5        01  $$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$03
5        01  Z$$$$$$$$$$$$$$$$$ABCDE$$$$$$$$$$$23456789$$$$$$0123456789$$$$$$04
5        02  $$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$01
5        02  $$$$$$$$$$$$$$$$+$$$$$$$$$$*$$$-/$$$$$$$$$$$$$$$$$$$$$$ $$$$$02
5        02  $$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$03
5        02  $ABCDEFGHI$$$$$$$JKLMNOPQR$$$$$$$$STUVWXYZ$$$$$$0123456789$$$$$$04
5        03   ABCDE$$$$$$$$$0123456789Z$$$$$$$$$$$$$$$$$$$$0123456789$$$$$$01
5        03  $ABCDE$$$$$$$$$$$$$$$$$$$Z$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$02
5        03  $$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$0$$3$56$$9$$$$$03
5        03  $AB$D$$$$$$$$$$$$$$$$$$$$$Z$$$$$$$$$$$$$$$$$$$$$0123456789$$$$$$04
```

TABLE 6.22-5
ASCII TRANSLATION FILE

6.23 Vehicle Request Card File (SYSIN)

The Vehicle Request Card File is a set of records read through the job stream on punched cards. It contains 80-character option cards that are necessary to the execution of:

(a) Vehicle Master File List program, VEHLST, or

(b) Coach History Report Generator program, RP064.

File and record specifications are given in Tables 6.23-1 through 6.23-3.

TABLE 6.23-1

SIMS S/U FILE SPECIFICATION

FILE NAME: Vehicle Request Card File

DATA SET NAME: SYSIN

NUMBER OF RECORD FORMATS: 1 RECORD SIZE: 80 Characters

FILE ORGANIZATION: Records are sequenced by: Bus Number

RECORD FORMATS

FORMAT CODE	RECORD NAME	MAX. NO.	MIN. NO.
-	Vehicle Request	U	1

PROGRAM USE

PROGRAM IDENT.	PROGRAM NAME	I/O	PROGRAM COBOL NAME FOR FILE
VEHLST	Vehicle Master File List	R	ICARD-FILE
RP064	Coach History Report Generator	R	CARD-FILE

TABLE 6.23-2

RECORD SPECIFICATION
(for VEHLST)

RECORD NAME: Vehicle Request Card

FILE NAME: Vehicle Request Card File

COBOL NAME OF RECORD: CARD-REC

RECORD LENGTH: 80 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBÓL FIELD NAME	FIELD DESCRIPTION
1	4	9(4)	WS-BUS-MIN	Low coach number
5	4	9(4)	WS-BUS-MAX	High coach number
9	2	XX	OPT-CODE	Report option code
11	2	XX	DIV-CODE	Division selection
13	68	X(68)	FILLER	
TOTAL	80			

TABLE 6.23-3

RECORD SPECIFICATION
(for RP064)

RECORD NAME: Vehicle Request Card

FILE NAME: Vehicle Request Card File

COBOL NAME OF RECORD: CARD-REC

RECORD LENGTH: 80 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	4	9(4)	BUS-REQ-N01	Low coach number
5	4	9(4)	BUS-REQ-N02	High coach number
9	2	XX	UNIT-REQ-CODE	Report option code
11	40	XX occurs 20 times	DIV-REQ-CODE(20)	Division selection up to 20 may be specified
51	30	X(30)	FILLER	
TOTAL	80			

7.0 PROGRAM DESCRIPTIONS

This section describes the individual programs that are referenced in the System Procedures section (Section 5.0). The source listings of these programs, with the exception of the utility programs, and of the copy library are contained in Supplement I to this document.

The programs included in the SIMS S/U System are listed in Table 7.0-1 in terms of program identification, program name, and the subsection that describes the program. The description of a program includes:

(a) Introduction,

(b) Program Flowchart,

(c) System Interfaces,

(d) Program Files,

(e) Processing Functions, and

(f) Error Messages.

The Data Acceptance program and the Vehicle Master File Edit/Update program are described in more detail than the report generator programs, as the reports are described in Section 3.0. With the exception of the Coach History Report Generator, the report generator programs use the COBOL report writer and descriptions of these programs include user report formats. At the top of the illustration of each report format are rows of numbers indicating the print positions.

TABLE 7.0-1

INDEX OF SIMS S/U PROGRAMS

Subsection Number	Program Identification	Program Name
7.1	DTTAPE	DTS Input Tape Processor
7.2	ACTAPE	ACTD Input Tape Processor
7.3	DA6ØØ	Data Acceptance
7.4	DG7ØØ	Vehicle Master File Edit/Update
7.5	DT1ØØ	Transaction Disk File Update
7.6	RPØ51	Commodity Report Generator
7.7	RPØ53	Commodity Usage Report Generator
7.8	RPØ54	Bus Analysis Report Generator
7.9	RPØ55	Unit Change Candidates Report Generator
7.10	RPØ56	Brake Status Report Generator
7.11	RPØ57	Monthly Tire Mileage Processor
7.12	RPØ58	Units Changed Report Generator
7.13	RPØ59	Unit Status Report Generator
7.14	RP062	Constants Files Listings Generator
7.15	RP064	Coach History Report Generator
7.16	RP066	Inspection Planning Report Generator
7.17	DT2ØØ	Transaction Master File Update
7.18	VEHLST	Vehicle Master File List
7.19	PRTMIL	Tire Mileage Report Generator
7.20	IEBGENER	Data Set Copy Utility
7.21	IERRCOØØ	Sort/Merge Utility
7.22	IEHDASDR	Disk Save Utility

7.1 DTTAPE - DTS Input Tape Processor

The DTS Input Tape Processor program (DTTAPE) is designed to translate and convert DTS service data collector records. These records are in the ASCII character set and require translation to EBCDIC. After translation, the data collector records are converted to the format of servicing performed records, which is acceptable as input to the S/U System.

A list of data collector record errors are printed with an asterisk under the field in error. A summary of valid and invalid data collector records are printed for each day's input.

The valid converted records are passed on to the Data Acceptance program, DA600, in data set CN1510.SRV.M.TRTAPE.

7.1.1 System Interfaces

Figure 7.1-1 is a program flow diagram. The program reads input records from a temporary storage area, DAILYTRN, on the S/U disk. This file is created by utility program IEBGENER, which copies from one to five data collector tapes to disk. During program execution, a file of parameters is read that is used in record conversion. This file, CN1510.SRV.S.DTPARM, contains conversion characters for translating ASCII characters into EBCDIC.

This file is specific to the translation of Dallas Transit data collector records.

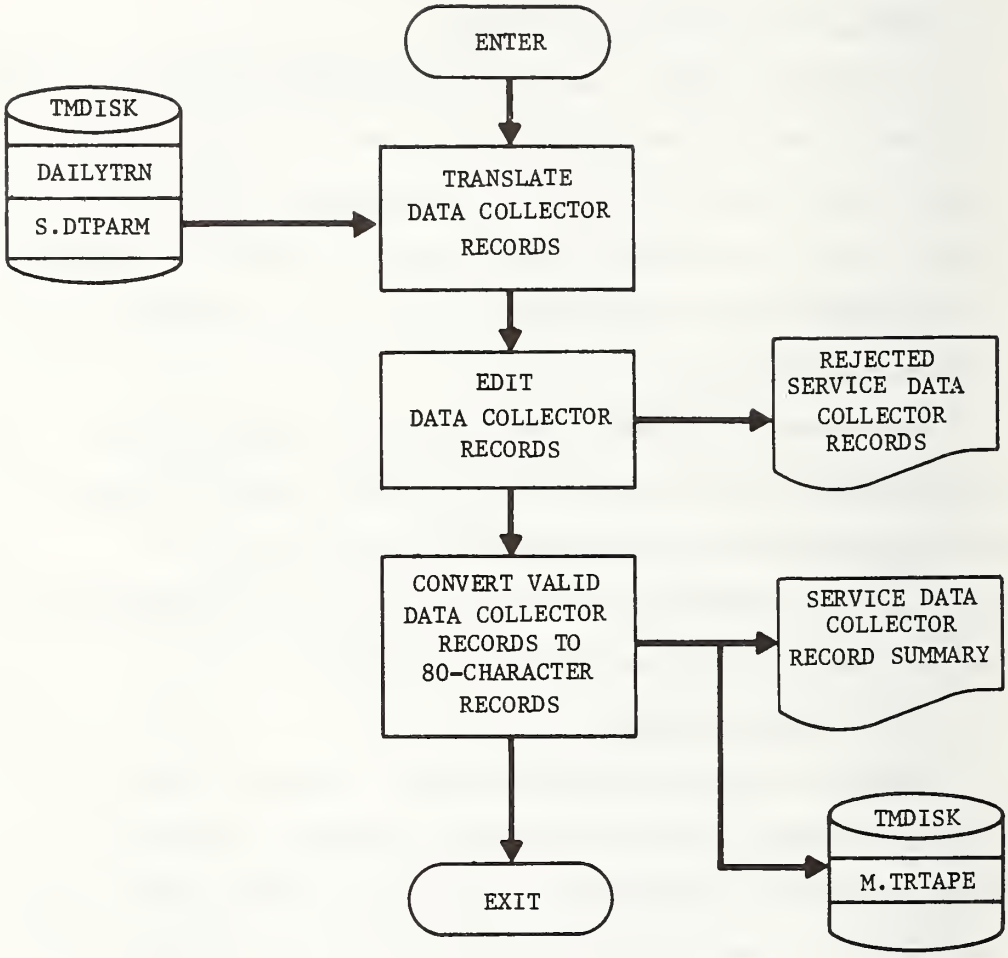


FIGURE 7.1-1
DTTAPE PROGRAM FLOWCHART

7.1 DTTAPE - DTS Input Tape Processor

The DTS Input Tape Processor program (DTTAPE) is designed to translate and convert DTS service data collector records. These records are in the ASCII character set and require translation to EBCDIC. After translation, the data collector records are converted to the format of servicing performed records, which is acceptable as input to the S/U System.

A list of data collector record errors are printed with an asterisk under the field in error. A summary of valid and invalid data collector records are printed for each day's input.

The valid converted records are passed on to the Data Acceptance program, DA600, in data set CN1510.SRV.M.TRTAPE.

7.1.1 System Interfaces

Figure 7.1-1 is a program flow diagram. The program reads input records from a temporary storage area, DAILYTRN, on the S/U disk. This file is created by utility program IEBGENER, which copies from one to five data collector tapes to disk. During program execution, a file of parameters is read that is used in record conversion. This file, CN1510.SRV.S.DTPARM, contains conversion characters for translating ASCII characters into EBCDIC.

This file is specific to the translation of Dallas Transit data collector records.

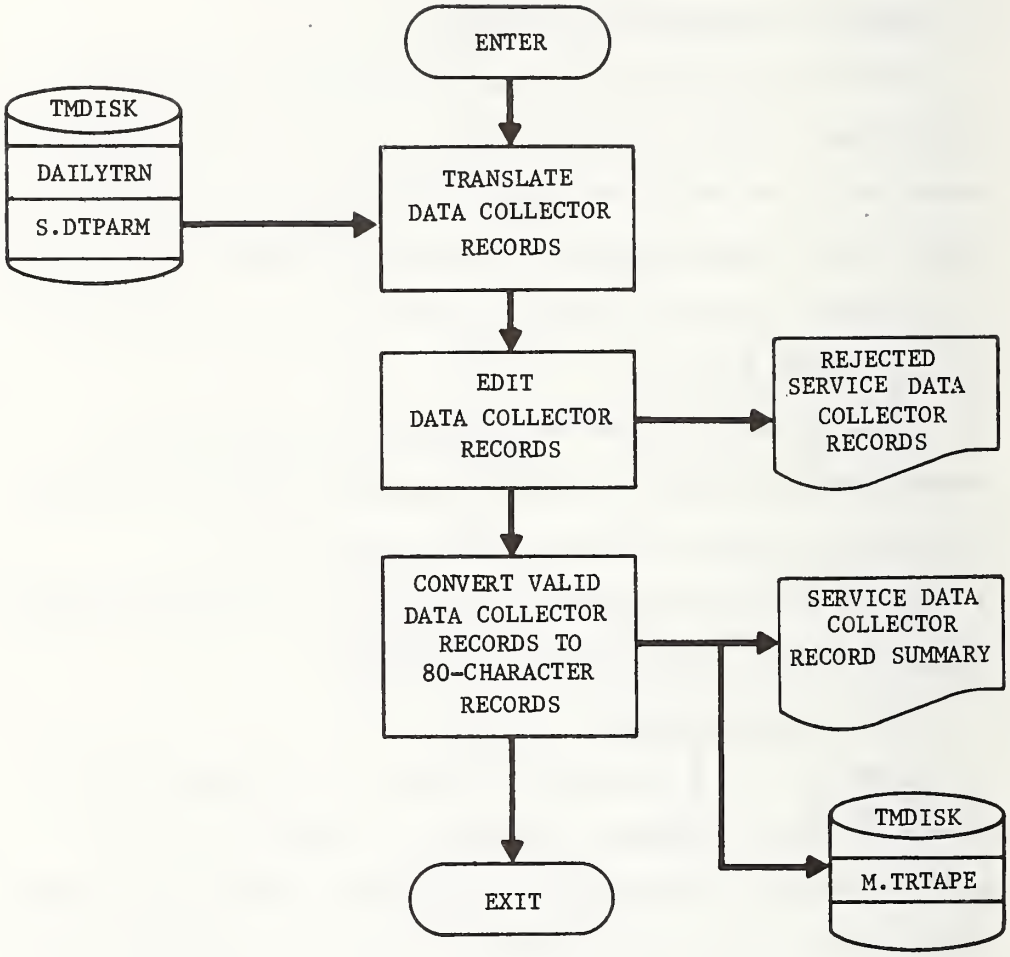


FIGURE 7.1-1
DTTAPE PROGRAM FLOWCHART

Program output consists of the data collector record edit report, the data collector record summary report, and the converted transaction file (CN1510.SRV.M.TRTAPE), which is passed on to program DA600.

7.1.2 Program Files

There are no files, other than print files, created during program execution.

7.1.3 Processing Functions

As illustrated in Figure 7.1-1, the Temporary Disk File DAILYTRN and the parameter file (CN1510.SRV.S.DTPARM) are read. The parameter file defines the types of records that the transaction file may contain and controls two sets of records, data collector records and other input records. The former are in the ASCII character set; the latter are in EBCDIC. Each set of records must be preceded by a Date/Signal Record. This record contains a transaction date and a signal code. If the value of the signal code is either '1' or '3', the next set contains data collector records that require translation and conversion to the S/U format. The non-data collector records are not processed; they are passed to the Daily Transaction File (CN1510.SRV.M.TRTAPE).

The translation from ASCII to EBCDIC takes place in an ALC subroutine called TRRTN. The input records are 80 characters long. The number of characters in a valid data collector record is 52, beginning with an 'A' in position 2 and ending with a 'Z' in position 52. Thus, the routine TRRTN takes the 80 characters and creates an abstracted 80-character record that contains the 52 character data collector record. The remaining 28 characters of the original data input go into the next record processed. Special edit provisions are included to handle records that are not in the standard 52-character format.

After the data collector record has been reformatted and translated, certain edit tests are performed. Each record must have the following attributes:

(a) the record must be 51 characters long (52 with the leading blank), and

(b) the first character must be an 'A' and the last, a 'Z'.

Records that pass these tests are converted to the format of the S/U Vehicle Servicing Performed (17) Record. The transaction date contained in the Date/Signal Record is included in the converted record. Invalid records are printed on the edit list with an appropriate message describing the error.

When all records have been processed, a data collector summary report is produced. This provides a count of valid and invalid records for each day's input.

7.1.4 Error Messages

If an error is detected, the appropriate message is printed and execution is terminated. A return code of 16 is issued that cancels execution of the system. The error messages are as follows:

(a) DTTAPE-01-DATE-SIGNAL ERROR: SIGNAL NOT DEFINED

The Date/Signal Record defines a type of record not defined as a valid input source.

(b) DTTAPE-02-DATE SIGNAL ERROR: SIGNAL IS EQUAL TO ZERO

The date in the signal record is equal to zero. It must be a valid date.

(c) DTTAPE-03-DATE-SIGNAL ERROR: DATE IS NOT VALID

The date is not within the following ranges:

DAY	01-31
MONTH	01-12
YEAR	72-

(d) DTTAPE-04-DATE-SIGNAL ERROR: DATE-SIGNAL RECORD MISSING

If a Date/Signal Record is not found for a new day or a new source of data, an error occurs.

7.1.5 Remarks

DTS inputs all transactions, both data collector and manual inputs, on one input tape. The various data sources are separated by date/signal records. One of these must be present for each data source including the data collector records.

DTTAPE translates and converts the data collector records. All other transactions are passed on, unedited, to the data acceptance program.

7.2 ACTAPE - ACTD Input Tape Processor

This program is executed whenever an ACTD service data collector tape is input to the S/U System. The data collector records are edited and converted to the format of servicing performed (17) transaction records. A list of data collector rejects is printed with an asterisk under the field in error. A summary is produced showing the count of valid and invalid data collector records for each date found on the data tape.

7.2.1 System Interfaces

Figure 7.2-1 is a program flow diagram. No previously created files are read since this is the first step in the job stream.

Program output consists of the edit report, data collector record summary, and the converted transaction file (CN1510.SRV.M.TRTAPE), which is passed on to program DA600, Data Acceptance.

7.2.2 Program Files

No internal files, other than print files, are used by program ACTAPE.

7.2.3 Processing Function

As illustrated in Figure 7.2-1, the input tape (ACFLUX) is read. It contains data collector records. Each record is edited in terms of specified criteria. The record must contain:

(a) a numeric time and day field,

(b) a time between 0 and 2400 hours,

(c) a Julian date not greater than 375,

(d) a "1" in column 9, and

(e) the characters "ØZ+" in columns 52-54.

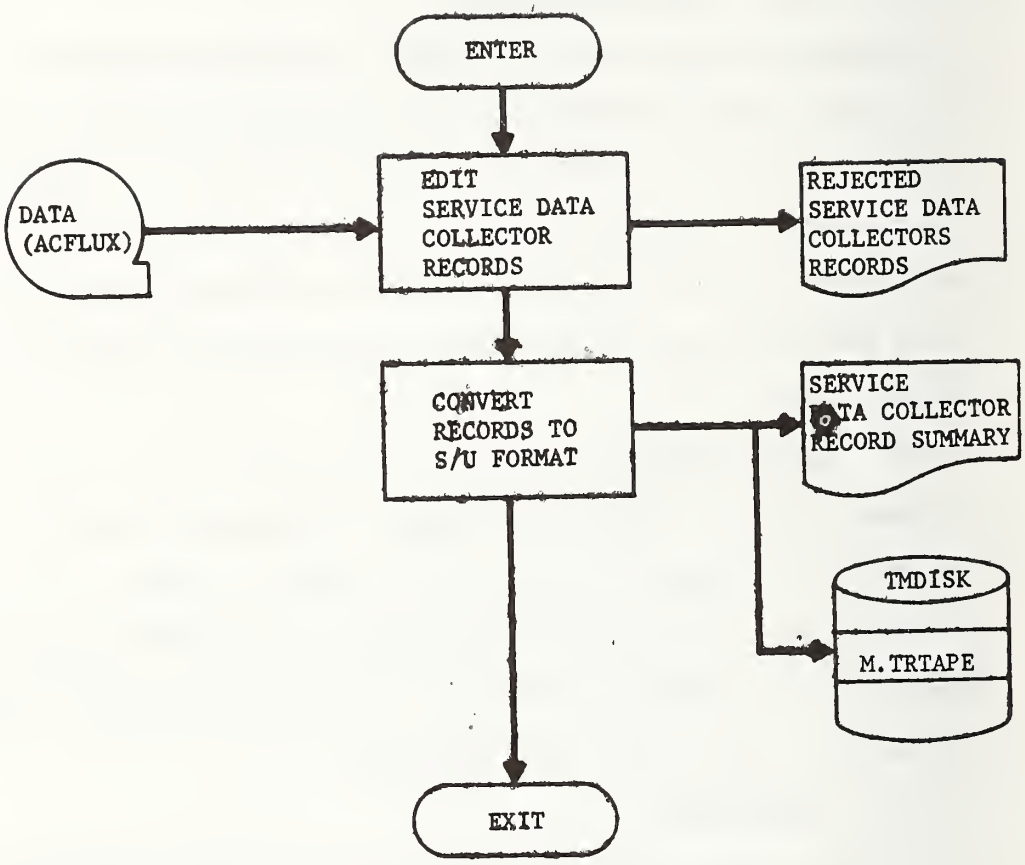


FIGURE 7.2-1
ACTAPE PROGRAM FLOWCHART

An error in any of these fields results in rejection of the record and printing of the record on the edit report. Asterisks are printed under the field in error.

Valid records are converted to the S/U format of servicing performed (17) records and output to file CN1510.SRV.M.TRTAPE. The date put into the output record is a date calculated from the input Julian date and time of day.

When all input records have been processed, a data collector summary report is produced and the program terminates.

7.2.4 Error Messages

No error messages are printed by this program.

7.2.5 Remarks

The edit report will print the message "NO EDIT ERRORS" if all data collector records are accepted. The ACTD data collector records are coded in BCD characters. Thus, no character translation is required. ACTD inputs only data collector records on tape ACFLUX, and this tape may be for more than one day. All other transactions are input to program DA600 on punched cards.

7.3 DA600 - Data Acceptance

The Data Acceptance program (DA600) is designed to:

(a) perform preliminary editing of vehicle transaction records.

(b) create a file of vehicle transactions with an associated 12-character sort key. The sort key contains the vehicle number, transaction date, and a format code. The remainder of the output transaction is comprised of the first 46 characters of the input 80-character transaction.

(c) edit system constants input records and maintain the four constants files. Edited constants records, with an associated sort key, are stored in a temporary file and processed after the output vehicle transaction file has been created.

(d) generate three reports, which are:

(1) Summary of Service System Transactions,

(2) Constants File Updates, and

(3) Unresolved Codes and Edit List.

7.3.1 System Interfaces

Figure 7.3-1 is a program flowchart. As illustrated, program inputs consist of:

(a) 80-character transaction records from two sources:

(1) the data set, CN1510.SRV.M.TRTAPE. This is a file of transactions created in the execution of the data collector tape conversion program. At ACTD, this program is ACTAPE; the output file contains data collector records only. At DTS, the conversion program is DTTAPE; the output file contains both data collector records and other records.

(2) a punched card transaction file, TRANCD. At ACTD, non-data collector records enter the S/U System in this manner. This may be the only form of input.

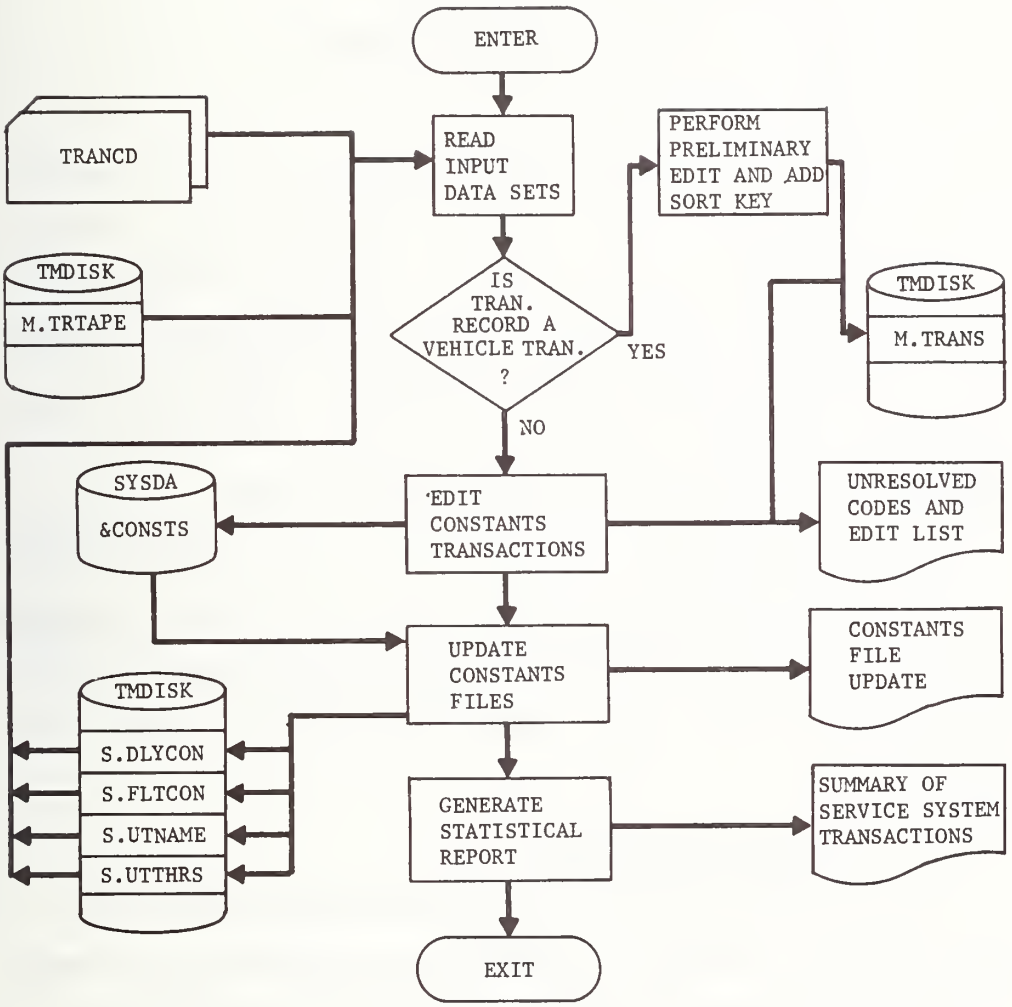


FIGURE 7.3-1
DA600 PROGRAM FLOWCHART

(b) the four S/U System constants files:

CN1510.SRV.S.DLYCON - Daily Constants File

CN1510.SRV.S.FLTCON - Fleet Constants File

CN1510.SRV.S.UTNAME - Unit Name File

CN1510.SRV.S.UTTHRS - Unit Threshold File

Program outputs consist of updated constants files; three reports (listed above); and a disk file of transaction records, reformatted for sorting. This output file, CN1510.SRV.M.TRANS, contains vehicle transaction records and is passed on to a sort routine prior to processing by the Vehicle Master Edit/Update program DG700.

7.3.2 Program Files

During program execution, one internal file is created. This file, SORT-CON-FILE, is a storage area for constants input records. The file is described in file and record specification sheets (see Tables 7.3-1 and 7.3-2).

7.3.3 Processing Functions

As illustrated in Figure 7.3-1, the input data sets are read. Each transaction is checked to determine the transaction code. There are two general classes of transactions: vehicle transactions and system constants input records.

7.3.3.1 Vehicle Transactions

If the transaction is a vehicle transaction (codes Ø2, Ø3, 13, 15, 17, 19, or D9), a 58-character output record is created. The new record contains a 12-character sort key and the first 46 characters of the input 80-character record.

TABLE 7.3-1

PROGRAM FILE SPECIFICATION

FILE NAME: Constants Update Transaction File

FD NAME: STORE-CON-FILE

DATA SET NAME: &CONSTS

NUMBER OF RECORD FORMATS: 1 RECORD SIZE: 88 Characters

FILE ORGANIZATION: Records are sequenced by: Sort Code
Fleet Code
Group/Unit Code or
Inspection Schedule/Step

RECORD FORMATS

RECORD NAME	MAX. NO.	MIN. NO.
Constants Update Transaction Record	U	Ø

TABLE 7.3-2

RECORD SPECIFICATION

RECORD NAME: Constants Update Transaction Record

FILE NAME: Constants Update Transaction File

COBOL NAME OF RECORD: SAVE-REC

RECORD LENGTH: 88 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	99	BLD-SEQ1	Internal Sort Code (see Note A)
3	2	99	BLD-SEQ2	Fleet Number (see Note B)
5	4	9999	BLD-SEQA	See Note C
9	80	X(80)	BLD-DATA	Contents of the 80-character input record
TOTAL	88			

NOTES:

A. Values of internal sort code are:

- Ø1 Service System Constants (C1) Record
- Ø2 Inspection Schedule Deletion (D5) Record
- Ø3 Inspection Schedule Definition (C5) Record
- Ø4 Fleet Constants and Limits (F1) Record
- Ø5 Vehicle Group-Unit Description (U1) Record
- Ø6 Unit Threshold Value Deletion (DT) Record
- Ø7 Unit Threshold Value (T1) Record

B. If the input record is an 'F1' record, this field contains Fleet Number; otherwise, it contains zeros.

C. If the input record is a 'D5' or 'C5' record this field contains Inspection Schedule/Step. If the input record is a 'U1' record, this field contains Group/Unit Code. Otherwise, it contains zeros.

In creating the sort key, three edit functions are performed:

(a) transaction date must be numeric,

(b) vehicle number must be numeric, and

(c) the transaction code must be valid.

A transaction that fails any of these checks is rejected and printed on the edit list with an asterisk under the field(s) in error. Accepted transactions are written to file CN1510.SRV.M.TRANS. In the next processing step, these transactions are sorted to produce another working file read by the Vehicle Master Edit/Update program DG700. Transactions are sorted so that they are in the same sequence as the Vehicle Master File. The sort sequence is:

(a) Vehicle Number,

(b) Transaction Date, and

(c) Internal Sort Code.

The internal sort code is a code placed on each transaction type to ensure sorting in the desired order for processing. Table 7.3-3 lists the internal sort codes assigned to each transaction. The sorting is accomplished using an IBM Utility program, IERRCOØØ, described in Section 7.18.

Before program termination, a summary report is printed of the transactions output to file CN1510.SRV.M.TRANS. This report gives a count of the number output of each transaction type.

TABLE 7.3-3

VEHICLE TRANSACTION CODE SORT SEQUENCE

SORT SEQUENCE	TRANSACTION CODE	TRANSACTION TYPE
11	D9	Vehicle records deletion
12	19	Vehicle assignment
13	Ø2	Daily miles
14	17	Vehicle servicing performed
15	Ø3	Vehicle inspection performed
16	13	Unit change performed
17	15	Brake reline performed

7.3.3.2 System Constants Input Records

When a transaction is encountered that will update the constants files, edit checks are made against field contents. A transaction that fails to meet the prescribed edit criteria is rejected and printed on the edit last with an asterisk under the offending field(s). Table 7.3-4 lists the edit criteria for each transaction type.

A transaction that meets all edit criteria is spooled to a temporary save file for later processing. When all input transactions have been processed, a check is made to determine whether any constants update transactions have been saved. If not, execution of the program is terminated. If constants transactions have been saved, the program branches to the constants update section.

An internal sort of the Constants Update Transaction File is accomplished by reading the entire file to determine the lowest sort key not processed. The number of times the file is read equals the number of transactions spooled to the file. The sort key ensures that the transactions are processed in the proper order.

The four S/U System constants files are:

(a) Daily Constants File, CN1510.SRV.S.DLYCON;

(b) Fleet Constants File, CN1510.SRV.S.FLTCON;

(c) Unit Name File, CN1510.SRV.S.UTNAME; and

(d) Unit Thresholds File, CN1510.SRV.S.UTTHRS.

TABLE 7.3-4

SYSTEM CONSTANTS UPDATE RECORDS:

EDIT CRITERIA

Transaction Code	Type	Edit Criteria
C1	Service system constants	Date must be numeric and not more 45 days prior to processing date. Days' Records constant must be equal to or greater than 35 but not more than 80, unless spaces or zeros. Maximum Duplicates must be equal to or greater than 20, unless spaces or zeros. Oil and coolant prices must be numeric or spaces. Each of the nine fuel prices must be numeric or spaces.
C5	Inspection schedule definition	Date must be numeric and not more 45 days prior to processing date. Inspection schedule must be numeric and have a value in the range 01-10. Inspection step must be numeric and have a value in the range 00-20 or be equal to 99. If inspection step equals 00, the inspection type must be numeric with a value in the range 01-20. This value must equal the number of steps in the schedule. If the inspection step equals 99, the inspection type must be numeric.

TABLE 7.3-4 (Continued)

Transaction Code	Type	Edit Criteria
		The number of steps input must equal the value coded in the schedule header record (this record has 00 in the step field and the number of steps in the type field). The step increment must be one and no intermediate steps may be omitted.
D5	Inspection schedule deletion	Date must be numeric and not more than 45 days prior to processing date. The inspection schedule must be numeric and between 1 and 10. The inspection schedule and type field must be spaces or zeros. The inspection schedule must already be on file CN1510.SRV.S.DLYCON.
F1	Fleet Constants	Date must be numeric and not more than 45 days prior to processing date. Fleet number must be numeric. Fuel capacity must be spaces or zeros or numeric. Oil capacity must be spaces or zeros or numeric.

TABLE 7.3-4 (Continued)

Transaction Code	Transaction Type	Edit Criteria
		Coolant capacity must be spaces or zeros or numeric. A series of fuel, oil, and coolant maximum and minimum may be coded. Each of these must be space or zeros or numeric. If the field has a value in it, the value must be within the limits defined in Table 7.3-5.
U1	Vehicle Group Unit Description	Date must be numeric and not more than 45 days prior to the transaction date. Group-unit code must be numeric. Group code must be between 01 and 50. Unit code must be between 01 and 99. Name field must not be all spaces.
T1	Unit Threshold	Date must be numeric and not more than 45 days prior to processing date. Fleet number must be numeric and a valid fleet from file CN1510.SRV.S.FLTCON. The threshold group-unit code must be numeric and a valid group-unit code from file CN1510.SRV.S.UTNAME. The threshold value must be numeric and non-zero.

TABLE 7.3-4 (Concluded)

Transaction Code	Type	Edit Criteria
DT	Unit Threshold Delete	Date must be numeric and not more than 45 days prior to processing date. Fleet number must be numeric and and valid fleet from file CN1510.SRV.S.FLTCON. The threshold group-unit code must be numeric and a valid group-unit code from file CN1510.SRV.S.UTNAME. The group-unit code must be on file for the designated fleet. The threshold value must be spaces or zeros.

TABLE 7.3-5

FLEETS CONSTANTS LIMITS

	Fuel	Oil	Coolant
Daily Maximum		00<n<11	00<n<13
7-Day Minimum	00.00<n<13.00	0009<n<0801	00<n<16
7-Day Maximum	02.00<n≤21.00	0149<n<2001	00<n≤41
28-Day Minimum	00.00<n<13.00	0009<n<0801	00<n<21
28-Day Maximum	02.00<n<21.00	0149<n<2001	03<n<99

Note: n = input value

These files are read into program working storage, modified with the new transaction data, and rewritten to the same data set area on the S/U disk.

The basic updating process consists of examining each data field on the input transactions and determining the contents. A value of spaces or zero is ignored. If data are present, the values replace the corresponding fields on file.

Transactions C1, D5, and C5 update the Daily Constants File, CN1510.SRV.S.DLYCON. Transaction C1 updates file records C1, C2, C3, and C4. Below is a listing of the file record types and the C1 transaction data items that affect them:

File Record	Transaction Data Item
C1	Days' Record Maximum Duplicates
C2	Oil Price
C3	Coolant Price
C4	Space has been allocated for nine fuel types on the input transaction. Reading across the card from left to right, the first fuel field corresponds to the first C4 file record, the second field to the second C4 record, etc.

The Daily Constants File can contain up to ten inspection schedules. All of these schedule records have a code of C5. The transaction code C5 updates these inspection schedules. Transaction D5 deletes an existing schedule from the file. An inspection schedule

may be added or replaced by use of C5 transactions. A series of these C5 transactions are necessary to define each inspection schedule and associated steps. The edit section verifies that all are present.

Transaction F1 is used to create or update a fleet record on file CN1510.SRV.S.FLTCON. This file is in fleet code sequence and a maximum of 40 fleets are permitted. If an F1 record is encountered for a fleet not on file, a new fleet record is created and inserted in the proper sort sequence. When a record does exist, file values are replaced with input values wherever present.

When creating a new file record, the user may or may not specify values for all fields. Those that are blank or zeros are given default values as follows:

	Fuel	Oil	Coolant
Capacity	95	26	92
Daily Maximum		04	06
7-Day Minimum	03.00	0099	00
7-Day Maximum	10.00	1100	15
28-Day Minimum	03.00	0099	00
28-Day Maximum	10.00	1100	60

The default value for brake thresholds, both front and rear, is '375'.

Transaction type U1 updates the Unit Name File, CN1510.SRV.S.UTNAME. The U1 transaction can be used to update an old name record or to build a new record. A maximum of 50 unit names may be kept on file.

If a unit name record already exists for the input group-unit code, the file name is replaced by the input name. If a record does not already exist, a new name record is created and inserted in the proper sort sequence. The sort sequence is by group-unit code.

Transaction types T1 and DT update the Unit Threshold File, CN1510.SRV.S.UTTHRS. A maximum of 2000 records are kept on file.

Transaction T1 is used to create or update a threshold value record. If a file record already exists for the input fleet/group-unit code, the threshold value on file is replaced by the input value. If no corresponding file record exists, a new record is created and inserted in the proper sort sequence. The sort sequence is on fleet and group-unit code. Transaction type DT is used to delete a threshold value record from the file.

A report is printed of all constants file updates. The report gives the contents of the old file record, if one, and the contents after updating.

When all constants records have been processed, the program terminates execution.

7.3.4 Error Messages

No error messages are printed by this program.

7.3.5 Remarks

If no transactions are passed on from DA600, a return code of 16 is set. This will prevent the remainder of the job from executing. At DTS, all inputs to DA600 are contained in CN1510.SRV.M.TRTAPE. ACTD uses both this data set and input cards.

The report of constants file updates is produced only if updates have actually occurred. If more than one constants transaction of the same type--e.g., two 'F1' transactions for the same fleet are input during a run--the first of these is ignored.

7.4 DG700 - Vehicle Master File Edit Update

The Vehicle Master File Edit/Update program (DG700) is designed to:

(a) edit vehicle transactions--each transaction is checked to determine if it meets specified edit criteria. If any field is in error, the entire transaction is rejected. The rejected transaction is displayed on the edit list.

(b) update the Vehicle Master File--the program reads the set of records for a vehicle. The edited transaction is checked against additional criteria. If it fails to meet these criteria, it is rejected. The rejected transaction is displayed on the edit list. If the transaction meets the criteria, the master file record is updated. Updated records are written out to the new Vehicle Master File.

(c) transfer copies of the master file records affected by updating to at least one of two files created by the program. These files are used in subsequent job steps. The files are:

  (1) the Daily Extract File--this file contains extracted Vehicle Master File records that are input to the Commodity Report Generator program (RPØ51); and

  (2) the Temporary Transaction File--this file contains records for further processing and storage in the Transaction Master File. These records are modified Vehicle Master File records.

(d) generate the Service Transaction Edit List report-- rejected transactions are displayed with an asterisk printed under the rightmost character of the fields in error.

7.4.1 System Interfaces

Figure 7.4-1 is a program flowchart. As illustrated, program inputs consist of:

(a) a sorted transaction file, CN1510.SRV.M.SRTRANS. The file contains the 58-character records created by the Data Acceptance program (DA600) and sorted by the utility program, IERRCØØØ. The sorted records are ordered by vehicle number to permit sequential processing against the Vehicle Master File.

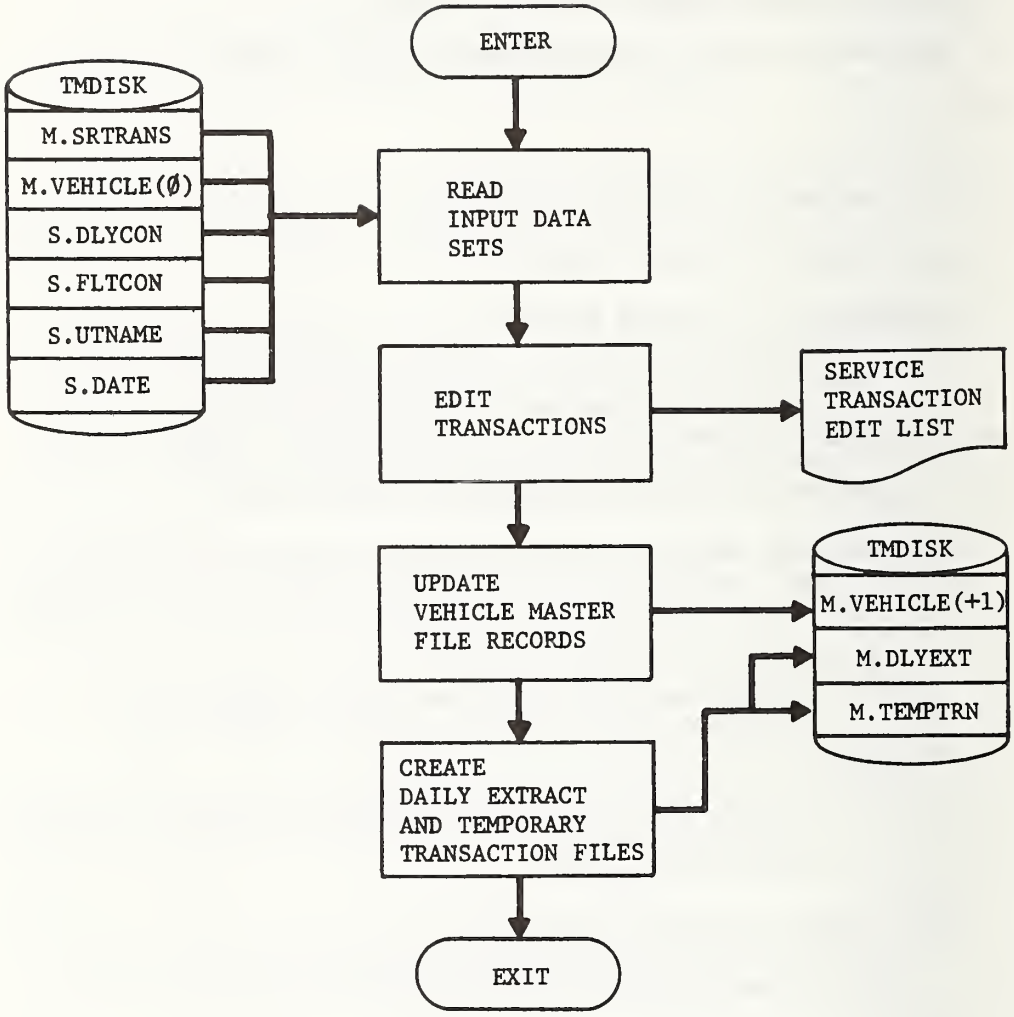


FIGURE 7.4-1
DG700 PROGRAM FLOWCHART

(b) the Vehicle Master File, CN1510.SRV.M.VEHICLE. This file is a generation data set. The version read is the most current version, version (Ø).

(c) the Request Date File, CN1510.SRV.S.DATE. This file contains report request records. These are used to control the creation of the Daily Extract File and the Temporary Transaction File.

(d) three of the system constants files. These files contain information required for the editing of the transaction. The files are:

(1) Daily Constants File: CN1510.SRV.S.DLYCON,

(2) Fleet Constants File: CN1510.SRV.S.FLTCON, and

(3) Unit Name File: CN1510.SRV.S.UTNAME.

Program outputs consist of the Service Transaction Edit List; the updated version of the Vehicle Master File, CN1510.SRV.M.VEHICLE(+1); and two new data sets. They are:

(a) Daily Extract File, CN1510.SRV.M.DLYEXT. This file is used by the Commodity Report Generator program, RPØ51.

(b) Temporary Transaction File, CN1510.SRV.M.TEMPTRN. This file contains specific types of Vehicle Master File records that have been modified. The record types that may be included are:

(1) Monthly Summary (26) Record,

(2) Monthly Commodity Cost (27) Record,

(3) Inspection (29) Record,

(4) Unit Change (31) Record,

(5) Engine Rering (34) Record,

(6) Engine Overhaul (35) Record,

(7) Brake Mileage (38) Record,

(8) Brake Drum (39) Record,

(9) Vehicle Header (20) Record, and

(10) Vehicle Records Deletion (99) Record.

These records are input to the Transaction Disk File Update program, DT1ØØ.

The updated version of the Vehicle Master File is input to the Monthly Tire Mileage Processor program (RP057) and to the following report generator programs:

(a) RP053 Commodity Usage Report Generator,

(b) RP054 Bus Analysis Report Generator,

(c) RP055 Unit Change Candidates Report Generator,

(d) RP056 Brake Status Report Generator,

(e) RP059 Unit Status Report Generator,

(f) RP064 Coach History Report Generator, and

(g) RP066 Inspection Planning Report Generator.

7.4.2 Program File

The program creates no internal file.

7.4.3 Processing Functions

The program reads the sorted transaction file, CN1510.SRV.M.SRTRANS, and uses the contents to update the Vehicle Master File.

The control for the program is the vehicle number coded in the input transaction. The set of records for a vehicle is read into working storage. If no transactions have been submitted for the vehicle, the records are written out to the new Vehicle Master File. If transactions

for the vehicle are found, they are processed and the updated vehicle records are output.

7.4.3.1 Edit and Update Criteria

Each transaction is checked to determine if it meets specified edit criteria. These criteria are described in Table 7.4-1. If the transaction fails to meet the applicable criteria, it is rejected and is displayed on the Service Transaction Edit List.

The edited transaction passes to the update section of the program. The transaction is checked to determine if it meets additional criteria. These criteria are described in Table 7.4-2. If the transaction fails to meet the update criteria, it is rejected and displayed on the Service Transaction Edit List.

7.4.3.2 Correction Modifier Codes

The description of the update criteria includes references to a Correction Modifier Code. This data element is included in the following types of transaction records:

(a) Vehicle Inspection Performed (03),

(b) Unit Change Performed (13), and

(c) Brake Reline Performed (15).

TABLE 7.4-1

VEHICLE TRANSACTION EDIT CRITERIA

Transaction Code	Transaction Type	Edit Criteria
		All vehicle transactions must meet the following criterion in addition to those listed: Transaction date must not be greater than processing date.
19	Vehicle Assignment	Model Year--must be numeric or spaces. Inspection Assignment--must be numeric or spaces. If numeric and non-zero, values of inspection schedule and step must be on file in Daily Constants File. Fleet Assignment--must be numeric or spaces. If numeric and non-zero, value must be on file in Fleet Constants File. Accumulated Miles--must be numeric or spaces.
		All other vehicle transactions must meet the following criterion in addition to those listed: Vehicle Number--must be on file in the Vehicle Master File.

TABLE 7.4-1 (Continued)

Transaction Code	Transaction Type	Edit Criteria
D9	Vehicle Records Deletion	All fields except transaction code, vehicle number, and transaction date must be zero or spaces. Vehicle must be assigned to division 88 (inactive vehicles).
Ø2	Daily Miles	Vehicle must not be assigned to division 88 (inactive vehicles). Transaction Date--must not be less than a computed test date. Test date is the date in the Accumulated Miles (21) Record less the Day's Record Constant in the Daily Constants File. Daily Miles--must be numeric and non-zero. Miles Operator--must be '+', '-', or space. If there is a Daily Record in the Vehicle Master File for the transaction date and if the value of Daily Miles in that record is equal to the value in the transaction record, the transaction is assumed to be a duplicate record. The transaction is rejected.
17	Vehicle Servicing Performed	Vehicle must not be assigned to division 88 (inactive vehicles). Transaction Date--same criterion as for Daily Miles (Ø2) transaction above.

TABLE 7.4-1 (Continued)

Transaction Code	Transaction Type	Edit Criteria
		Fuel, oil, coolant, and torque fluid must be numeric or spaces. At least one of the above quantity fields must contain a non-zero numeric value. Operators associated with the above quantity fields must be '+', '-', or spaces. Non-zero numeric values in the above quantity fields must be within the limits established for the fleet to which the vehicle belongs. Fleet limits are on file in the Fleet Constants File. If there is a Daily Record in the Vehicle Master File for the transaction date and if all values in that record are equal to values in the transaction record, the transaction is assumed to be a duplicate record. The transaction is rejected.
		All other vehicle transactions must meet the following criteria in addition to those listed: Accumulated Miles must be numeric or spaces. If the transaction date is less than the computed test date (see above under Daily Miles), Accumulated Miles must be numeric and non-zero.

TABLE 7.4-1 (Continued)

Transaction Code	Transaction Type	Edit Criteria
		Correction Modifier Code must be blank, zero, or one of four alphabetic characters: D, R, X, or Y. If Correction Modifier Code contains D or R, Accumulated Miles must be numeric and non-zero.
Ø3	Inspection Performed	Inspection Schedule and Step Performed must be numeric and valid--that is, defined in the Daily Constants File. If Reason Code is spaces or zero, a default value (=1) is set. If Correction Modifier Code is X or Y, all fields except transaction code, vehicle number, transaction date, inspection schedule, and step performed must be spaces.
13	Unit Changed Performed	Group/unit code must be numeric and valid--that is, defined in the Unit Name File. If Reason Code is spaces or zero, a default value (=1) is set. If Correction Modifier Code is X or Y, all fields except transaction code, vehicle number, transaction date, and group-unit code must be spaces.

TABLE 7.4-1 (Concluded)

Transaction Code	Transaction Type	Edit Criteria
15	Brake Reline Performed	If Reason Code is spaces or zero, a default value (=3) is set. Drum sizes may be zero, spaces, or numeric. If no Brake Drum Record exists in the Vehicle Master File, all four Brake Drum Size fields must contain a non-zero numeric value. If all four Brake Drum Size fields contain non-zero numeric values, the Brake Lining Code field must contain a value other than zero or spaces. Input record may contain non-zero numeric values in one, two, or four of the Brake Drum Size fields. The presence of such values in three of the fields is an error. If Correction Modifier Code is X or Y, all fields except transaction codes, vehicle number, and transaction date must be spaces.

TABLE 7.4-2

VEHICLE TRANSACTION UPDATE CRITERIA

Transaction Code	Type	Update Criteria
19	Vehicle Assignment	If the vehicle is not on file, the input record must contain: (a) numerics in the Accumulated Miles field, and (b) a Fleet Code that is on file in the Fleet Constants file, and (c) a Division Code other than zeros. If the vehicle is on file, the input record must contain: (a) a transaction date that is greater than or equal to file date, and (b) zero or spaces in the Accumulated Miles field, unless no Daily Record has been created. If the input record contains non-zero numerics in Inspection Schedule Assigned and Inspection Step Assigned, and there is an Inspection Record in the file, then (a) the value of Inspection Schedule Assigned must be different from the value of Inspection Schedule Due in the Inspection Record, or (b) the value of Inspection Step Assigned must be one greater than the value of the Inspection Step Due in the Inspection Record.

TABLE 7.4-2 (Continued)

Transaction Code	Transaction Type	Update Criteria
D9	Vehicle Records Deletion	There are no additional criteria for these types of transactions.
Ø2	Daily Miles	
17	Vehicle Servicing Performed	

All other types of vehicle transactions must meet the following criteria in addition to those listed.

If the Correction Modifier Code contains spaces and

(a) a record to be updated by the transaction is on file, then

(1) the transaction date must be greater than or equal to the date in the file record.

(2) the transaction date must not be less than a computed test date. The test date is the date in the Accumulated Miles (21) record less six months.

(3) Service Miles, computed during update, must not be a negative value.

(b) a record to be updated by the transaction is not on file and the transaction date is less than a computed test date, Accumulated Miles must contain non-zero numerics. The test date is the date in the Accumulated Miles (21) record less the value of Days' Records constants in the Daily Constants File.

TABLE 7.4-2 (Continued)

Transaction Code	Transaction Type	Update Criteria

		If the Correction Modifier Code contains a value of 'X' or 'Y' then
		(a) the record to deleted must be in the Vehicle Master File.
		(b) the transaction date must meet the six months date test described in (a)(2) above.
		(c) the transaction date must be greater than the date in the file record to be deleted.
		If the Correction Modifier Code contains a value of 'R' or 'D', then
		(a) the record to be updated must be on file.
		(b) the transaction date must meet the six months date test described in (a)(2) above.
		(c) Accumulated Miles must contain non-zero numerics.

Ø3	Vehicle Inspection Performed	An Inspection Record must be on file.

TABLE 7.4-2 (Continued)

Transaction Code	Transaction Type	Update Criteria
		If the Correction Modifier Code contains spaces, Inspection Schedule Performed and Inspection Step Performed must be equal to Inspection Schedule Due and Inspection Step Due from the file. If the Correction Modifier Code contains a value of 'X' or 'Y', all fields must be spaces except transaction code, transaction date, vehicle number, inspection schedule, and step performed. If the Correction Modifier Code contains 'R' or 'D', then (a) Inspection Schedule Performed in transaction and in the file record must be equal. (b) Inspection Step Performed in the transaction must be equal to or one less than Inspection Step Performed in the file record.
13	Unit Change Performed	If the Correction Modifier Code contains a value of 'R', 'D', 'X' or 'Y', the record to be updated or deleted must be on file. If the Correction Modifier Code contains a value of 'X' or 'Y', all fields must be spaces except transaction code, transaction date, vehicle number, and group-unit code.

TABLE 7.4-2 (Concluded)

Transaction Code	Transaction Type	Update Criteria
15	Brake Reline Performed	If the Correction Modifier Code contains a value of 'R', 'D', 'X', 'Y', the Brake Mileage (38) Record and the Brake Drum (39) Record must be on file. If the Correction Modifier Code contains a value of 'X' or 'Y', all fields must be spaces except transaction code, transaction date, and vehicle number.

The Correction Modifier Code field may contain values:

Value	Explanation
Zero or spaces	Transaction is an original transaction. Normal update procedures will be executed.
R	Transaction is a file correction record. A previous update of the file record was performed in error. Transaction values will restore the file record to its status before the error was made.
D	Transaction is a file correction record. A previous update of the file record caused inaccurate data to be entered. Transaction values will replace the values on file.
X	Transaction is a record deletion record. The file record is deleted.
Y	Transaction is a record deletion record. The file record is deleted but an output record containing the contents of the file record is created. Output record contains accumulated mileage as of the date of record deletion.

The value of the Correction Modifier Code also determines the value of the Transaction Modifier Code included in the records written to the Temporary Transaction File. The Transaction Modifier Code functions are described in Section 7.5.3.

7.4.3.3 Update Procedures

If the transaction meets both sets of criteria, the appropriate Vehicle Master File records are updated (or created) and written to the new file. Records are also passed to the Daily Extract File and/or the Temporary Transaction File, as described later in this section. The

updating procedures are:

Vehicle Assignment (19): This transaction record identifies the vehicle and defines its assignments. Updating procedures are:

(a) If the transaction identifies a vehicle that is new to the system, the Vehicle Header (20) Record and the Accumulated Miles (21) Record are created. The appropriate input values are placed in these records. If a vehicle assignment is not coded in the transaction, the file record fields are zero filled.

(b) If the initial transaction specifies the inspection schedule to which the vehicle is assigned and the first step in that schedule to be performed, the Inspection (29) Record is created. The assigned schedule and step codes are placed in Inspection Schedule and Step Due field.

(c) If the Header Record.exists, input values--except Accumulated Miles, Inspection Schedule Assigned, and Inspection Step Assigned--replace file record values.

(d) If the Accumulated Miles Record exists and no Daily (24) Record has been created, Accumulated Miles replaces the file record value.

(e) If the Inspection Record exists, the assigned schedule and step codes replace Inspection Schedule and Step Due.

Vehicle Records Deletion (D9): The entry of this transaction causes all records for the vehicle to be deleted from the Vehicle Master File.

Daily Miles (02): The user may enter more than one transaction for the same date. If this occurs, the Daily Miles values are aggregated.

Before updating is performed, a check is made to determine if any Daily (24) Record exists for the transaction date. The mileage in each existing record is compared with the input value. If they are the same, the transaction is rejected. The duplicate record counter is

incremented by one. When the duplicate record counter is greater than the user-specified duplicate records constant, system execution is abnormally terminated. Updating procedures are:

(a) If a Daily Record for the transaction date exists in the file and the value of the mileage field is zero or spaces, the input value is placed in this record. This record may exist if a Vehicle Servicing Performed (17) transaction for that date has not yet been processed. Otherwise, a Daily Record is created. This occurs when:

(1) the Vehicle Servicing Performed transaction for that date has not yet been processed, and

(2) the transaction represents a correction of mileage information already processed.

(b) The mileage value is added algebraically to the mileage field in:

(1) Accumulated Miles Record.

(2) The appropriate Monthly Summary (26) Record. If this record does not exist, it is created.

(c) The transaction date is compared with the date in the following types of file records, if they are on file:

(1) Inspection (29) Record,

(2) Unit Change (31) Record,

(3) Engine Rering (34) Record,

(4) Engine Overhaul (35) Record, and

(5) Brake Mileage (38) Record.

If the transaction date is less than or equal to the date in the file record, the mileage value is added algebraically to the accumulated miles value in that record.

Vehicle Servicing Performed (17): This transaction contains the quantities of consumables--fuel, oil, coolant, and torque fluid-dispensed

to the vehicle on the transaction date. The record may also contain the identification number of the terminal through which the transaction was entered if automated data collectors are used for data entry.

Before file updating is performed, a check is made to determine if any Daily (24) Record exists for the transaction date. The values in each existing record are compared to the input values of fuel, oil, coolant, torque fluid, and terminal identification. If both sets of values are identical, the input record is rejected and the duplicate record counter is incremented by one. When the duplicate record counter is greater than the user-specified constant, system execution is abnormally terminated.

Updating procedures are:

(a) If a Daily Record for the transaction date exists and the values in the fuel, oil, coolant, and torque fluid fields are zero or spaces, the input values are placed in the file record. Otherwise, a Daily Record is created.

(b) Consumable values, except torque fluid, are added to the comparable fields in the appropriate Monthly Summary (26) Record. If this record does not exist, it is created.

(c) The cost of each consumable added to the Monthly Summary Record is calculated. The unit costs of consumables are obtained from the Fleet Constants File, after determining the identity of the fleet to which the vehicle belongs. Costs are added algebraically to the appropriate Monthly Commodity Cost (27) Record. If this record does not exist, it is created.

Vehicle Inspection Performed (03): This transaction contains a record of a maintenance event, the performance of a vehicle inspection. Updating procedures are:

(a) The identity (Inspection Step), date, and reason for the inspection performed replace the information for the last inspection performed.

(b) Unless entered on the transaction, accumulated vehicle mileage as of the transaction date is calculated. Current accumulated vehicle mileage is obtained from the Accumulated Miles Record. Daily Miles for dates after the transaction date are subtracted from that value. Daily Miles are obtained from Daily (24) Records. The input accumulated miles or the calculated value, whichever applies, replaces the accumulated miles in the Inspection Record.

(c) The number of steps in the assigned inspection schedule is determined. If the step performed is the last step in the inspection cycle, Inspection Step Due is set as '01'; otherwise, it is incremented by one. The type of inspection due is obtained from the Daily Constants File and replaces the value in the Inspection Record.

Unit Change Performed (13): This transaction contains a record of a maintenance event. This event may be:

(a) The replacement of a unit, previously defined to the system, on a vehicle.

(b) An engine re-ring or an engine overhaul job. Special group-unit codes identify these jobs. The codes are 0898 and 0899, respectively.

Updating procedures are:

(a) A check is made to determine if a Unit Change (31) Record for the unit identified (by Group-Unit Code) is on file. If it does not exist, it is created.

(b) The date of and reason for the unit change replace the comparable file values.

(c) Unless entered on the transaction, accumulated mileage as of the transaction date is calculated as described for inspections performed. The input accumulated miles or the calculated value, whichever applies, replaces the accumulated mileage value in the Unit Change Record.

(d) The above procedures apply for engine re-ring and engine overhaul jobs except:

(1) An engine re-ring transaction updates the Engine Rering (34) Record.

(2) An engine overhaul transaction updates the Engine Overhaul (35) Record.

(3) An engine overhaul transaction also updates the Engine Rering Record. This procedure is followed because an engine overhaul job includes an engine re-ring.

Brake Reline Performed (15): This transaction contains a record of a brake reline job performed. This job may be a complete job (all four wheels) or a partial job (one or two wheels). Updating procedures are:

(a) A check is made to determine if a Brake Mileage (38) Record and a Brake Drum (39) Record exist on file. If they do not exist, they are created.

(b) The transaction is checked to determine if the event recorded is a complete job or a partial job.

(c) If the transaction contains a record of a complete brake job, then

(1) the date of and reason for the job and brake lining code replace comparable file values in the Brake Mileage Record.

(2) Unless entered on the transaction, accumulated mileage as of the transaction date is calculated as described for inspections performed. The input accumulated miles or the calculated value, whichever applies, replaces the accumulated mileage value in the Brake Mileage Record.

(3) Transaction date and brake drum sizes replace comparable values in the Brake Drum Record.

(d) If the transaction contains a record of a partial brake job, the Brake Mileage Record is not updated. Transaction date and brake drum sizes (which must be numeric and non-zero) replace the comparable values in the Brake Drum Record.

7.4.3.4 Daily Extract File

In addition to updating the Vehicle Master File, the program creates the Daily Extract File. The records output to this file are used to generate the Commodity Report.

The records passed are copies of the 30-character master file records. The types of records placed in the Daily Extract File are:

(a) Vehicle Header Record (20),

(b) Accumulated Miles Record (21),

(c) Inspection Record (29),

(d) Daily Record (24), and

(e) Monthly Summary Record (26).

The Vehicle Header and Accumulated Miles records are always transferred. The Inspection Record is passed, if it exists. The transfer of the Daily Record and the Monthly Summary Record is controlled by Request Date Records for the Commodity Report. All Daily Records are passed that have a date greater than or equal to the report date requested. All Monthly Summary Records are passed that have a year-month code greater than or equal to the report date year and month.

7.4.3.5 Temporary Transaction File

All types of master file records, except daily records and the Accumulated Miles Record, affected by updating are reformatted and passed to the Temporary Transaction File. If necessary, a special record (format code 99) is created and also transferred to the file. This record is created if a Vehicle Records Deletion transaction has been processed.

With the exception of the Monthly Summary Record and the Monthly Commodity Cost Record, two records are passed to the Temporary Transaction File for each transaction processed. These are the file record before it was updated (the old record) and the file record after updating.

The records transferred are 40-character records. The additional 10 bytes contain, as appropriate:

(a) Work Center Code, contained in the transaction record processed.

(b) Service Miles, calculated when a record of a maintenance event is processed. Service Miles is the mileage traveled by the vehicle between two events of the same type. For example, mileage between two inspections. Service Miles is calculated by subtracting Accumulated Miles in the old record from the updated value of this field. If the transaction represents a file correction, the service miles are set to zero.

If the record is for a partial brake job, the accumulated miles at the partial job is stored in the service miles field.

(c) Transaction Modifier Code. A one-digit code is added to each record except monthly records. This code controls the processing of the record by the Transaction Disk File Update program, DT100. The value of the code is determined by the record format code and the Correction Modifier Code in the input transaction. The Transaction Modifier Code is set for records of maintenance events:

Correction Modifier Code	Transaction Modifier Code	
	Old Record	New Record
Blank, zero or 'Y'	Ø	Ø
'R'	1	1
'D'	1	Ø
'X'	1	Ø

The Vehicle Header records and the Vehicle Record Deletion records receive a code of '2'.

7.4.3.6 Purging Master File Records

The SIMS S/U System is designed to retain on the Vehicle Master File:

(a) monthly records for seven months.

(b) daily records for a specified number of days. The user specifies this purge factor by entering the Days' Records constant in the Daily Constants File. The value of the factor must be in the range 35-80.

The Vehicle Master File Edit/Update program automatically purges the oldest records when the above limits have been reached.

7.4.4 Error Messages

During program execution, an error may occur that results in system termination. System termination is caused by forcing the program to abnormally terminate execution. This is done to prevent the saving of output files that are in error. An error message is printed identifying

the problem. The messages are:

(a) DG700-0100 - VEHICLE MASTER OUT OF SEQUENCE

The input version of the Vehicle Master File was found to be out of proper sort sequence.

(b) DG700-0200 - MAXIMUM DUPLICATE RECORD LIMIT REACHED INTENTIONAL ABNORMAL TERMINATION CAUSED

Too many Daily Miles (02) and/or Servicing (17) transactions were found to have duplicates on file. It is assumed that this input source has been processed previously and was therefore submitted in error.

7.4.5 Remarks

On a monthly basis, the user will request the Transaction Master File Update procedure SRVUTR. When this request is made, DG700 moves the three most recent Monthly Summary (26) and Monthly Commodity Cost (27) records to the Temporary Transaction File.

7.5 DT1ØØ - Transaction Disk File Update

The Transaction Disk File Update program, DT1ØØ, is designed to:

(a) perform preparatory processing of maintenance job records, which are to be used to update the Transaction Master File; and

(b) assist management to review maintenance events for which records have been entered in the S/U System.

The basic functions performed by the program are:

(a) processing of Vehicle Master File records, written out to the Temporary Transaction File during the Vehicle Master File Update program, DG700.

(b) updating of the Monthly Transaction File. This file is used, in turn, to update the Transaction Master File.

(c) reformatting of records used to update the Monthly Transaction File.

(d) generation of SIMS S/U Coach Transaction reports, which display details of the maintenance events recorded in the Vehicle Master File during system execution and of the file records replaced. These reports are:

(1) Inspection Performed Notice (see Figure 7.5-1),

(2) Unit Changed/Overhaul/Rering (see Figure 7.5-2),

(3) Brake Job Done (see Figure 7.5-3), and

(4) Buses Added/Deleted/Updated (see Figure 7.5-4).

7.5.1 System Interfaces

Figure 7.5-5 is a program flowchart. As illustrated, program input consists of four data sets available from prior job steps. These data sets are:

(a) the Unit Name File, CN1510.SRV.S.UTNAME, maintained by the Data Acceptance program, DA600.

CARD COLUMNS

```
                                                
```

CARD COLUMNS

```
                                                
```

CARD COLUMNS

```
                                                
```

CARD COLUMNS

```
                                                
```

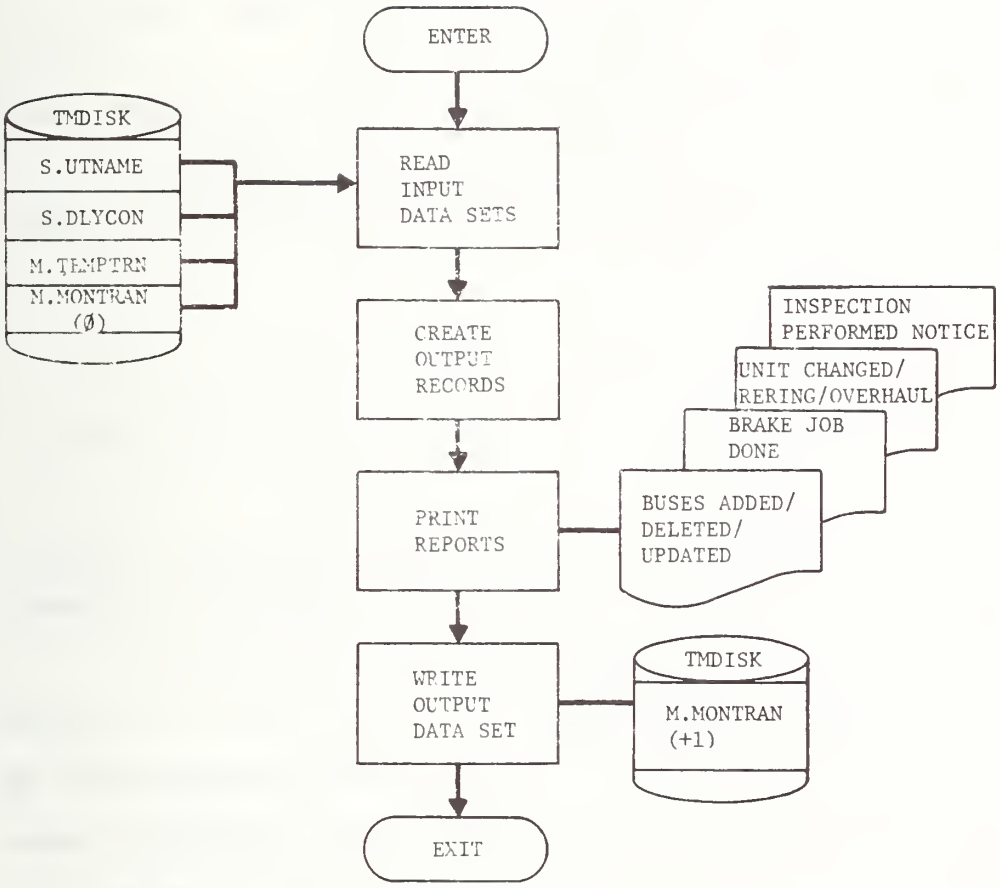


FIGURE 7.5-5
DT100 PROGRAM FLOWCHART

(b) the Daily Constants File, CN1510.SRV.S.DLYCON, maintained by the Data Acceptance program, DA600.

(c) the Temporary Transaction File, CN1510.SRV.M.TEMPTRN, created by the Vehicle Master File Edit/Update program, DG700.

(d) the Monthly Transaction File, CN1510.SRV.M.MONTRAN. This file is a generation data set; program DT1ØØ reads the most current version.

Output consists of:

(a) the updated version of the Monthly Transaction file, and

(b) print files that do not interface with any other program.

7.5.2 Program Files

Program DT1ØØ creates no internal files other than print files during system execution. The print files are described by the report format specifications (Figures 7.5-1 through 7.5-4).

7.5.3 Processing Functions

As illustrated in Figure 7.5-5, the input data sets are read. The Unit Name File records are used to create a table, organized by Group-Unit Code. Each entry in the table consists of the code and the unit name. Inspection Schedule and Inspection Interval for each inspection schedule are obtained from the Daily Constants File and also arranged in a table, by Inspection Schedule. Records contained in the input version of the Monthly Transaction File are copied onto the output version. The 40-character records in the Temporary Transaction File are processed, as described below. These records are augmented Vehicle Master File records, described in Section 6.10.

The types of records contained in the Temporary Transaction File can be:

(a) Header (2Ø) Record,

(b) Monthly Summary (26) Record,

(c) Monthly Commodity Cost (27) Record,

(d) Inspection (29) Record,

(e) Unit Change (31) Record,

(f) Engine Rering (34) Record,

(g) Engine Overhaul (35) Record,

(h) Brake Mileage (38) Record,

(i) Brake Drum (39) Record, and

(j) Vehicle Records Deletion (99) Record. (This is a 2Ø record with a new format code, created by DG700.)

When any of the above types of records, except the 26 and 27 records, are updated during execution of the Vehicle Master File Edit/Update program, two file records are written out to the Temporary Transaction File. These are:

(a) the record before it is updated (the old record), and

(b) the record after it is updated.

The old file record is written out first. Each of these records contains a Transaction Modifier Code. The value of the code is Ø, 1, or 2. Only new 26 and 27 records are output; these records do not contain a Transaction Modifier Code.

In DT1ØØ, processing of the records in the Temporary Transaction File depends on the record format:

(a) Records with format codes 26 and 27 are reformatted and written out to the Monthly Transaction File.

(b) Records with format codes 2Ø and 99 are not written out to the Monthly Transaction File. They are moved to the print file and displayed on the Vehicles Added/Deleted/Updated report. The manner in which the old and new file records of these types are processed for report purposes is described later in this section.

(c) The processing of records with any other format code depends on the values of the Transaction Modifier Code in both the old and the new file records. The values of these codes are determined and:

    (1) If both values are 'Ø', the new file record is reformatted and written out to the Monthly Transaction file.

    (2) If both values are '1', the old file record is reformatted and written out to the Monthly Transaction file.

    (3) If the old record contains a value of '1' and the new record contains a value of 'Ø', both records are reformatted and written out to the Monthly Transaction file.

The reformatting of the output record consists of interchanging the positions of the Format Code and Vehicle Number fields and adding the processing date, thus creating a 46-character output record. The 46-character records are described in Section 6.11.

The types of records contained in the Temporary Transaction File can be:

(a) Header (2Ø) Record,

(b) Monthly Summary (26) Record,

(c) Monthly Commodity Cost (27) Record,

(d) Inspection (29) Record,

(e) Unit Change (31) Record,

(f) Engine Rering (34) Record,

(g) Engine Overhaul (35) Record,

(h) Brake Mileage (38) Record,

(i) Brake Drum (39) Record, and

(j) Vehicle Records Deletion (99) Record. (This is a 2Ø record with a new format code, created by DG700.)

When any of the above types of records, except the 26 and 27 records, are updated during execution of the Vehicle Master File Edit/Update program, two file records are written out to the Temporary Transaction File. These are:

(a) the record before it is updated (the old record), and

(b) the record after it is updated.

The old file record is written out first. Each of these records contains a Transaction Modifier Code. The value of the code is Ø, 1, or 2. Only new 26 and 27 records are output; these records do not contain a Transaction Modifier Code.

In DT1ØØ, processing of the records in the Temporary Transaction File depends on the record format:

(a) Records with format codes 26 and 27 are reformatted and written out to the Monthly Transaction File.

(b) Records with format codes 2Ø and 99 are not written out to the Monthly Transaction File. They are moved to the print file and displayed on the Vehicles Added/Deleted/Updated report. The manner in which the old and new file records of these types are processed for report purposes is described later in this section.

(c) The processing of records with any other format code depends on the values of the Transaction Modifier Code in both the old and the new file records. The values of these codes are determined and:

    (1) If both values are 'Ø', the new file record is reformatted and written out to the Monthly Transaction file.

    (2) If both values are '1', the old file record is reformatted and written out to the Monthly Transaction file.

    (3) If the old record contains a value of '1' and the new record contains a value of 'Ø', both records are reformatted and written out to the Monthly Transaction file.

The reformatting of the output record consists of interchanging the positions of the Format Code and Vehicle Number fields and adding the processing date, thus creating a 46-character output record. The 46-character records are described in Section 6.11.

Irrespective of the values of the transaction modifier codes, both file records of all types of records containing such codes are moved to the appropriate print file. For printing, additional processing may be required:

(a) The value of Service Miles in the new 29 record is tested against Inspection Interval of the inspection schedule identified in the record. Inspection Interval is obtained from the table created from the Daily Constants File. If Service Miles is less than 80 percent of Inspection Interval, Service Miles is flagged by an asterisk on the report.

(b) For unit changes, engine re-rings, and engine overhauls, the name of the unit is obtained from the Unit Name table.

(c) Both old and new 20 records are checked. If the old record contains zeros, then the new record represents the addition of a vehicle to the Vehicle Master File. The words 'New Vehicle' are moved to the print area. Otherwise, the words 'Vehicle Updated' are printed.

(d) Both old and new 99 records are checked. The new record contains zeros. The old record represents the deletion of a vehicle from the Vehicle Master File. The words 'Deleted Vehicle' are printed.

After the additional processing required is completed, the report is generated.

7.5.4 Error Messages

DT1ØØ does not produce any error message.

7.5.5 Remarks

If no valid unit name can be obtained from the Unit Name table, the message 'UNIT NAME NOT FOUND' is printed.

If no transactions are processed, the following message is printed: 'DT100 - NO TRANSACTIONS PROCESSED FOR CURRENT DAY'.

7.6 RP051 - Commodity Report Generator

The Commodity Report Generator program (RP051) is designed to produce two daily reports:

(a) The Commodity Report: This report is a listing that enables maintenance management to monitor the quantities of commodities (fuel, oil, coolant, and torque fluid) dispensed to each bus. The commodity information is associated with mileage traveled by the bus on the report date, for the current month to date, and accumulated lifetime miles. The format of the report is described in Figure 7.6-1.

(b) The Commodity Summary Report: This report is a summary of commodity and daily mileage information, by operating division and for the total system. The format of the report is described in Figure 7.6-2.

In the listing, information for a bus is flagged if:

(a) daily mileage but no fuel quantity has been recorded or

(b) fuel quantity but no daily mileage has been recorded; and/or

(c) oil quantity recorded exceeds a pre-determined maximum; or

(d) coolant quantity recorded exceeds a pre-determined maximum.

The flagging of this information is designed to draw the attention of management to that particular bus.

The information displayed in the listing may, at the option of the system user, be:

(a) for all buses in active service; and

(b) for those buses for which

  (1) a data item has been flagged in accord with the criteria defined above and

  (2) there is more than one servicing record for the report date.

```
                                  LS-TRANSIT-TITLE
                                  COMMODITY REPORT                                PAGEZZZ9
                                  FOR DAY  MO/DA/YR                               MO/DA/YR

DIVISION XX
-----------

                          MONTH                          *   COMMODITIES   *
                          MILES                          *    DISPENSED    *
BUS          ACCUM        TO                  MILES      FUEL      OIL  COOL  TERM
NO           MILES        DATE                TODAY      GALS      QTS  QTS   ID
-----  ----------  ------              -------  -----     ---  ----  ----

ZZ99   Z,ZZZ,ZZ9-  XXXXXX              -Z,ZZ9X   -ZZ9.9X -Z9.9X -Z9X  XXXX-Z
ZZ99   Z,ZZZ,ZZ9-  XXXXXX              -Z,ZZ9X   -ZZ9.9X -Z9.9X -Z9X  XXXX-Z
  ZZ99                                          -ZZ9.9X -Z9.9X -Z9X  XXXX-Z
ZZ99   Z,ZZZ,ZZ9-  XXXXXX              -Z,ZZ9X   -ZZ9.9X -Z9.9X -Z9X  XXXX-Z
ZZ99   Z,ZZZ,ZZ9-  XXXXXX              -Z,ZZ9X   -ZZ9.9X -Z9.9X -Z9X  XXXX-Z

ZZ99   Z,ZZZ,ZZ9-  XXXXXX              -Z,ZZ9X   -ZZ9.9X -Z9.9X -Z9X  XXXX-Z
ZZ99   Z,ZZZ,ZZ9-  XXXXXX              -Z,ZZ9X   -ZZ9.9X -Z9.9X -Z9X  XXXX-Z
ZZ99   Z,ZZZ,ZZ9-  XXXXXX              -Z,ZZ9X   -ZZ9.9X -Z9.9X -Z9X  XXXX-Z
ZZ99   Z,ZZZ,ZZ9-  XXXXXX              -Z,ZZ9X   -ZZ9.9X -Z9.9X -Z9X  XXXX-Z
ZZ99   Z,ZZZ,ZZ9-  XXXXXX              -Z,ZZ9X   -ZZ9.9X -Z9.9X -Z9X  XXXX-Z
  .        .         .                   .         .        .     .

                                       -------  --------  -----  ----
DIVISION TOTALS                        ZZ,ZZ9   ZZ,ZZ9.9  ZZ9.9  ZZZ9
```

FIGURE 7.6-1
FORMAT OF COMMODITY REPORT

```
         1111111111222222222233333333344444444445555555556666666666777777777 8
12345678901234567890123456789012345678901234567890123456789012345678901234567890

                                LS-TRANSIT-NAME
                                COMMODITY SUMMARY                          PAGEZZZ9
                                FOR DAY  MO/DA/YR                          MO/DA/YR


                                                      * COMMODITIES DISPENSED *
                                                      -------------------------
                                          MILES         FUEL        OIL        OIL
                                          TODAY         GALS        QTS        QTS
                                          -----         ----        ---        ---
          DIVISION  XX                    ZZ,ZZ9     ZZ,ZZ9.9     ZZ9.9      ZZZZ9
          DIVISION  XX                    ZZ,ZZ9     ZZ,ZZ9.9     ZZ9.9      ZZZZ9
          DIVISION  XX                    ZZ,ZZ9     ZZ,ZZ9.9     ZZ9.9      ZZZZ9
            .                               .          .            .          .


          SYSTEM TOTALS                   ZZ,ZZ9     ZZ,ZZ9.9     ZZ9.9      ZZZZ9

END-OF-REPORT R-51. PRINTED MO/DA/YR  BY PROG1
```

FIGURE 7.6-2
FORMAT OF COMMODITY SUMMARY

A modified version of the program (RPØ51D) generates a report that contains additional information to aid management in the scheduling of preventive maintenance. Month-to-date mileage is replaced by mileage since the last inspection performed on the bus and the next scheduled inspection is identified.

7.6.1 System Interfaces

Figure 7.6-3 is a program flowchart. As illustrated, program input consists of three data sets, available from prior job steps. These data sets are:

(a) the Request Date File (CN1510.SRV.S.DATE), created through the execution of the IBM utility program, IEBGENER.

(b) the Fleet Constants File (CN1510.SRV.S.FLTCON), updated through the execution of the Data Acceptance program, DA600.

(c) the Daily Extract File (CN1510.SRV.M.DLYEXT), created through the execution of the Edit/Update program, DG700. The Vehicle Master File (CN1510.SRV.M.VEHICLE) can be substituted for the Daily Extract File.

Program outputs consist of print files that do not interface with any other program.

7.6.2 Program Files

During execution, a file internal to the program is created. This is the Commodity Report File, REPORT-FILE, described in Table 7.6-1. Tables 7.6-2 and 7.6-3 describe the records it contains.

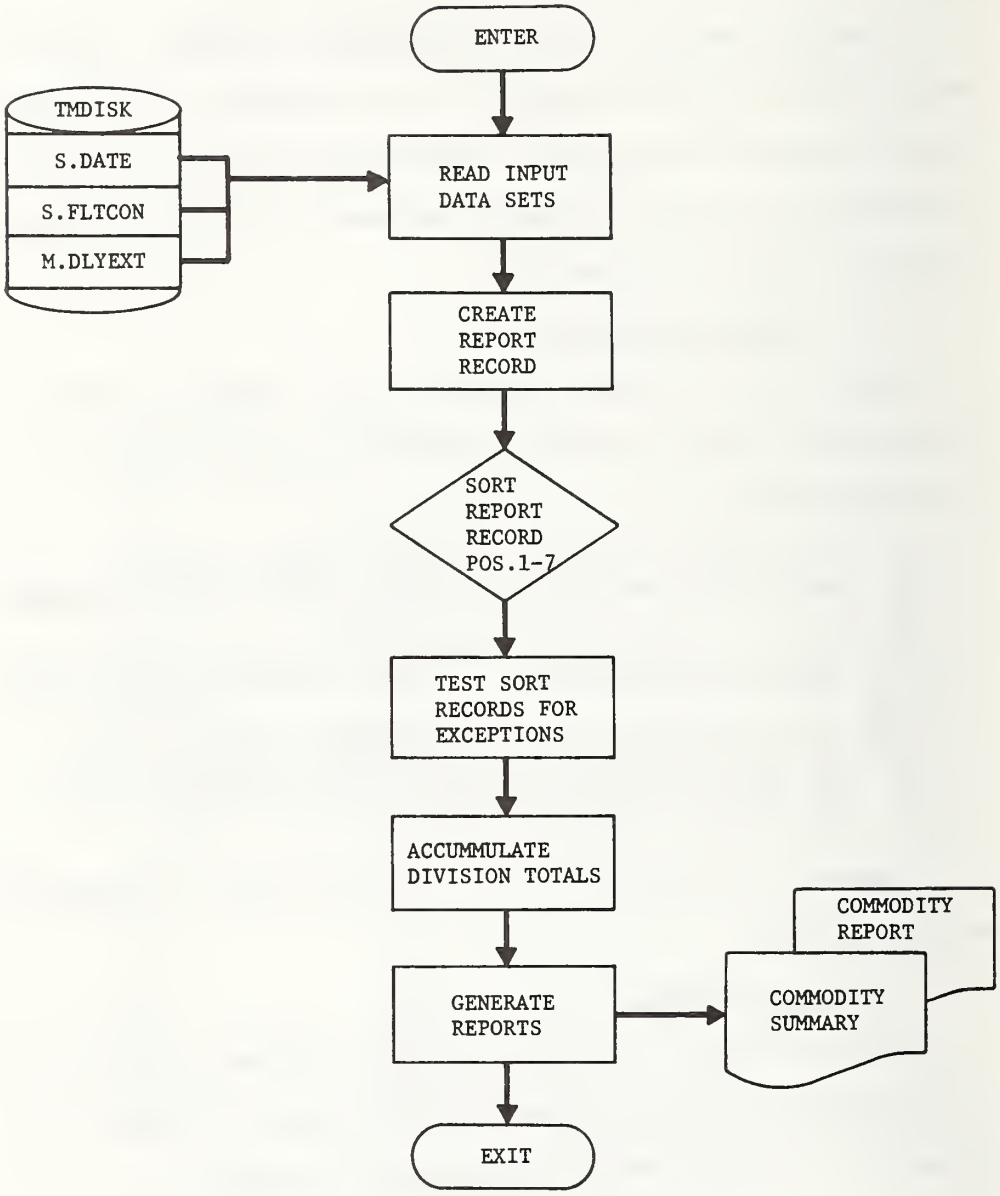


FIGURE 7.6-3
RP051 PROGRAM FLOWCHART

TABLE 7.6-1

PROGRAM FILE SPECIFICATION

FILE NAME: Commodity Report File

FD NAME: REPORT-FILE

NUMBER OF RECORD FORMATS: 2 RECORD SIZE: 49 Characters

FILE ORGANIZATION: Records are ordered by: Bus Number
Sequence Number

RECORD FORMATS

FORMAT CODE	RECORD NAME	MAX. NO. PER BUS	MIN. NO. PER BUS
Sequence No. = 0	Commodity Report Record	1	1
Sequence No. > 0	Duplicate Commodity Report Record	9	0

TABLE 7.6-2

RECORD SPECIFICATION

FIELD NAME: Commodity Report Record

FILE NAME: Commodity Report File

COBOL NAME OF RECORD: REPORT-RECORD

RECORD FORMAT CODE: Sequence No. = 0

RECORD LENGTH: 49 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	DIV	Division Number
3	4	9999	BUS-NO	Bus Number
7	1	9	SEQ-O	Sequence Number (=0)
8	4	XXXX	TERM-ID	Terminal ID Number
12	7	9(7)	ACCUM-MILES	Accumulated Miles
19	6	X(6)	MILES-INSP	See Note 1
25	2	XX	INSP-TYPE-DUE	Next Inspection-type
27	2	99	INSP-SCHED	Next Inspection-schedule
29	2	99	INSP-STEP	Next Inspection-step
31	4	S9(4)	MILES-DAY-B	Daily Miles
35	4	S9(3)V9	Fuel	Fuel-gal.
39	3	S99V9	OIL	Oil-qt.
42	2	S99	COOLANT	Coolant-quarts
44	1	9	TORQUE	Torque-quarts
45	1	9	DUP-REPORT-FLG	Duplicate record indicator
46	2	99	OIL-MAX	Max. oil test value
48	2	99	COOL-MAX	Max. coolant test value
TOTAL	49			

Note 1: This field contains value of either (a) monthly miles, which is used by RP051A, or (b) miles since last inspection, which is used by RP051D. Also, this field is redefined as follows:

19	1	X	SP-FILLER	Space Filler
20	2	XX	INSP-MONTH	Inspection Month
22	1	X	SL-FILLER	Slash Filler (=/)
23	2	XX	INSP-DAY	Inspection Day

TABLE 7.6-3

RECORD SPECIFICATION

RECORD NAME: Duplicate Commodity Report Record

FILE NAME: Commodity Report File

COBOL NAME OF RECORD: DUP-RECORD

RECORD FORMAT CODE: Sequence No. = 1-9

RECORD LENGTH: 49 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	D-DIV	Division Number
3	4	9999	D-BUS-NO	Bus Number
7	1	9	SEQ-1	Sequence Number (=1-9)
8	4	XXXX	D-TERM-ID	Terminal ID Number
12	23	X(23)	FILLER	Filler
35	4	S9(3)v9	D-FUEL	Fuel
39	3	S99v9	D-OIL	Oil
42	2	S99	D-COOLANT	Coolant
44	1	9	D-TORQUE	Torque Fluid
45	1	9	D-DUP-REPORT-FLG	Duplicate Record Indicator
46	2	99	D-OIL-MAX	Max. Oil Test Value
48	2	99	D-COOL-MAX	Max. Coolant Test Value
TOTAL	49			

7.6.3 Processing Functions

As illustrated in Figure 7.6-3, the input data sets are read. The date file provides report control and the date for which the report is requested. Fleet numbers and oil and coolant maximum test values contained in the Fleet Constants File are arranged in a table. The Commodity Report Record (REPORT-RECORD) is created from the Daily Extract File records, if the division to which the bus is assigned is other than division 88. This division consists of out-of-service buses.

Procedures to create REPORT-RECORD are:

(a) The division assignment date (I-ASSIGN-DATE) is compared to the report date (D-DATE). If the former is greater than the latter, then the prior division number (I-PRIOR-DIV) is used rather than the current division number.

(b) By reference to the fleet number of the bus, the fleet constants table is searched to obtain the oil and coolant maximum test values (OIL-MAX and COOL-MAX).

(c) The accumulated mileage (I-MILES-PTD) and appropriate month-to-date mileage (I-MILES-MTD) are obtained from the Daily Extract File. In the modified version of the program (RPØ51OD), accumulated mileage at inspection (I-INSP-ACCUM-MILES) is obtained instead of month-to-date mileage.

(d) The dates of the daily transaction records (I-VEH-DAILY) are compared with the report date. The daily miles values in records containing a date greater than the report date are used to adjust the accumulated mileage and, as appropriate, the month-to-date mileage.

(e) In RPØ51D, I-INSP-ACCUM-MILES is subtracted from I-MILES-PTD, as adjusted, to obtain mileage since the last inspection.

(f) Mileage and commodity data are obtained from the daily transaction record for the report date. The mileage value in any additional record for that date is added to the miles value in REPORT-RECORD.

(g) In RPØ51D, the schedule number, step number, and type of the next inspection due are obtained from the inspection performed record (I-VEH-INSPEC) and included in REPORT-RECORD.

If there is more than one daily transaction record for the report date, DUP-RECORD is created for each additional daily transaction record. DUP-RECORD is created in the same manner as REPORT-RECORD, except that mileage and inspection data are not included. A record sequence number is included in each DUP-RECORD created.

After the report record and duplicate record (if any) are created, they are released to SORT-FILE. The records are sorted in the following sequence:

1. Division number
2. Bus number
3. Record sequence number (report record = sequence 0
   duplicate records = sequence 1 thru 9)

The sorted file is read. The oil and coolant quantities are tested against the oil maximum and coolant maximum test values. If a transaction quantity is greater than the test value, an asterisk flags that commodity. If there is mileage for the vehicle but no fuel recorded, an asterisk is placed by the fuel quantity. If there is fuel recorded for the vehicle but no mileage, an asterisk is placed by the fuel quantity. If there is fuel recorded for the vehicle but no mileage, an asterisk is placed by the mileage. After testing, mileage, fuel, oil, and coolant values are added to division totals.

For the complete listing, each bus record is printed. Duplicate records are printed immediately after the original record. For the exception report, only records containing an exception flag and multiple records are printed. At the end of each division, totals are printed.

The Commodity Summary Report is printed, using division totals. These values are summed to provide system totals.

7.6.4 Error Messages

If an error is detected, the appropriate message is moved to a print file and printed. Error messages are:

(a) RPØ51--0310 NO DATE RECORD FOUND IN DATE FILE.

This message is printed if the program was executed without a date request card. Program execution is terminated when this is detected.

(b) RPØ51--0100 VEHICLE EXTRACT FILE OUT OF SEQUENCE.

This message is printed if the records in the extract file (or vehicle master file) are not sequenced by bus number in ascending order. Program execution is terminated when this condition is detected.

(c) RPØ51--0300 INVALID DATA FIELD OR RECORD FOUND IN FLEET CONST RECORD (CONTENTS OF RECORDS).

This message is printed if the fleet constants record contains invalid characters. Program execution is not terminated. Default values are used for testing oil and coolant values.

(d) RP051-0300 INVALID DATA FIELD OR RECORD FOUND IN DATF FILE RECORD (CONTENTS OF RECORDS)

This message is printed if a non-numeric date was found in the Request Date file.

7.6.5 Remarks

The Daily Extract File (CN1510.SRV.M.DLYEXT) is the normal input data set. As an alternative, the Vehicle Master File can be used, provided that a JCL override card is included in the job deck. This card has the following format:

```
//SRVØ9.IMSTRØ2 DD DSN=CN151Ø.SRV.M.VEHICLE(Ø),
// DISP=OLD,VOL=PRIVATE
```

The exception report option is indicated by the inclusion of an option code, Ø1, in the date card. For example, a date containing 'Ø173Ø63ØØ1' indicates a request for the report, on the exception basis, for June 30, 1973.

The program allows for a maximum of 10 daily records per bus for a report date and for a maximum of 40 fleets.

7.7 RP053 - Commodity Usage Report Generator

The Commodity Usage Report Generator program (RP053) is designed to produce an on-demand report. The program is normally executed on a weekly basis.

RP053 produces a report of daily fuel, oil, and coolant used, by vehicle, for a four-week period. Each of the four weeks ends on a Saturday. Three report options are available:

(a) a complete listing for all vehicles in the master file (see Figure 7.7-1);

(b) an exception report, listing only those vehicles that violate 28-day commodity/usage limits; and

(c) an exception report, listing only those vehicles that violate 28-day or 7-day commodity limits.

The report is designed to enable maintenance management to monitor usage of commodities and to identify potential maintenance problems--indicated by the flagging of vehicles that violate commodity limits.

The commodity test values are read from the Fleet Constants File, CN1510.SRV.S.FLTCON. The following tests are made for each vehicle, and failure of the test results in the report data field being flagged:

(a) 28-day fuel miles per gallon must be between a specified minimum and maximum,

(b) 28-day oil miles per quart must be between a specified minimum and maximum,

(c) 28-day coolant used must be less than a specified maximum,

(d) 7-day fuel miles per gallon must be between a specified minimum and maximum,

(e) 7-day oil miles per quart must be between a specified minimum and maximum, and

```
                                                
```

(f) 7-day coolant used must be less than a specified maximum.

7.7.1 System Interface

Figure 7.7-2 is a program flowchart. As illustrated, program input consists of three data sets available from prior job steps. These data sets are:

(a) the Request Date File, CN1510.SRV.S.DATE, created through the execution of the IBM utility program, IEBGENER;

(b) the Fleet Constants File, CN1510.SRV.S.FLTCON, maintained by the Data Acceptance Program, DA6ØØ; and

(c) the Vehicle Master File, CN1510.SRV.M.VEHICLE ( ), updated through the execution of the Vehicle Master Edit/Update program, DG700.

Program output consists of the Commodity Usage Report. No files are created that are read by other programs in the system.

7.7.2 Program Files

During program execution, one internal file is created. This file is the Commodity Usage Report File. File and record specifications are given in Tables 7.7-1 and 7.7-2. This file is an extract of information from the Vehicle Master File and is used to generate the Commodity Usage Report.

7.7.3 Processing Functions

Program RP053 reads the Request Date File to determine the report date. Using this date, the date of the first preceding Saturday is calculated. This date becomes the last day of the 28-day report period. The period consists of four weekly periods, each ending on a Saturday.

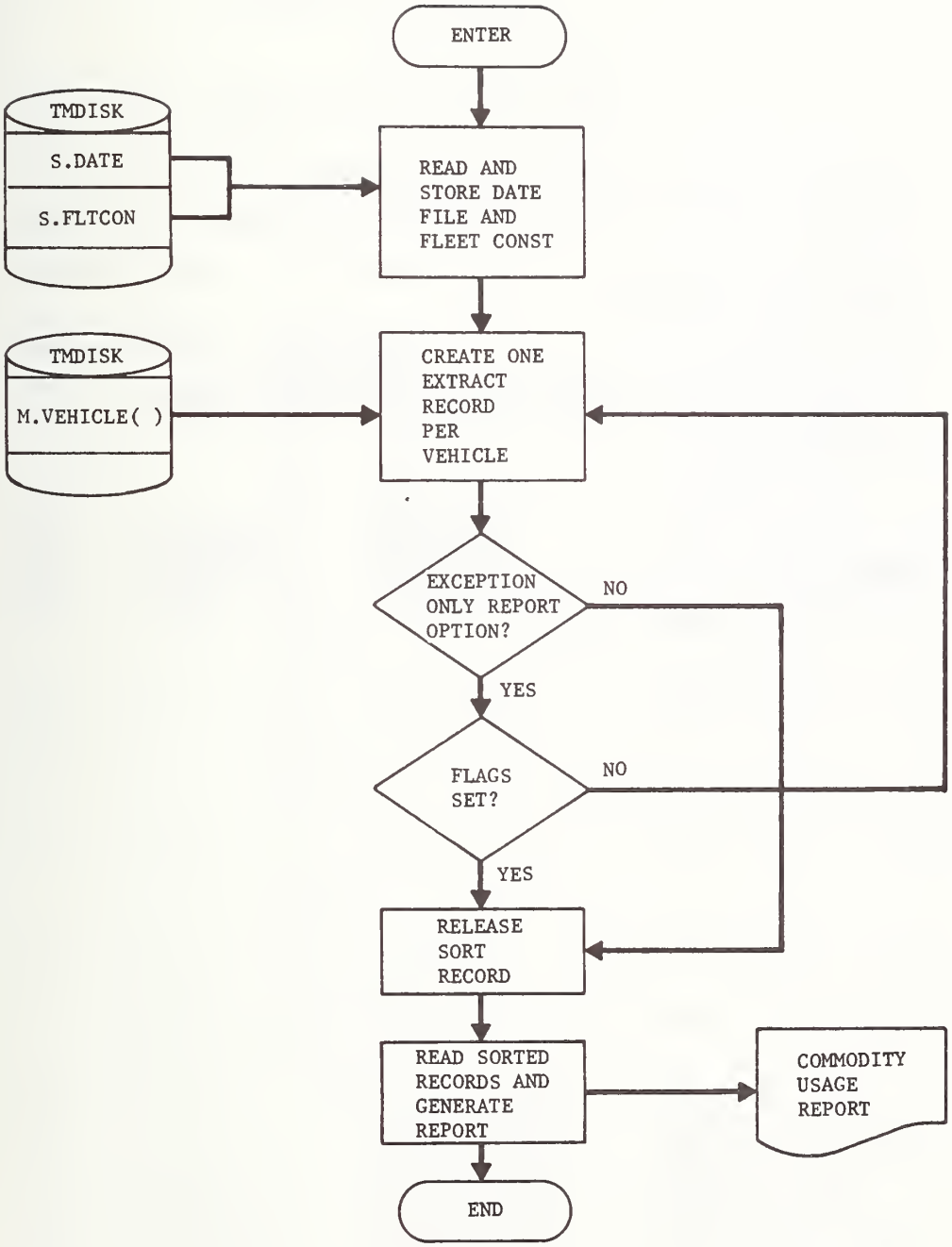


FIGURE 7.7-2
RP053 PROGRAM FLOWCHART

TABLE 7.7-1

FILE SPECIFICATION

FILE NAME: Weekly Commodity Usage Report File

FD NAME: None

DATA SET NAME: &REPORT

NUMBER OF FORMATS: 1 RECORD SIZE: 274 Characters

FILE ORGANIZATION: Sequenced by: Division, Vehicle Number

RECORD FORMATS

RECORD NAME	MAX. NO. PER BUS	MIN. NO. PER BUS
Commodity Usage Report Record	1	Ø

TABLE 7.7-2

RECORD SPECIFICATION

RECORD NAME: Commodity Usage Report Record

FILE NAME: Commodity Usage Report File

COBOL NAME OF RECORD: REPORT-RECORD

RECORD LENGTH: 274 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	DIV	Division Number
3	4	9(4)	BUS-NO	Vehicle Number
7	5	9(5)	DE-MILES-28	28-day Mileage
12	4	99V99	DE-MPG-28	28-day Fuel Miles per gallon
16	4	9(4)	DE-MPQ-28	28-day Oil Miles per quart
20	4	9(4)	DE-COOL-28	28-day Coolant Used
24	16	9(4) occurs 4 times	WK-MILES(4)	Weekly Mileages for Four Report Weeks
40	16	99V99 occurs 4 times	DE-MPG-WK(4)	Weekly Fuel Miles per Gallon for Four Weeks
56	16	9(4) occurs 4 times	DE-MPQ-WK(4)	Weekly Oil Miles per Quart for Four Weeks
72	84	9(3) occurs 28 times	FUEL(28)	Daily Fuel for 28 Days
156	56	99 occurs 28 times	OIL(28)	Daily Oil for 28 Days
212	56	99 occurs 28 times	COOL(28)	Daily Coolant for 28 Days
268	1	X	DE-MPG-28-IND	28-day Fuel Flag
269	1	X	DE-MPQ-28-IND	28-day Oil Flag
270	1	X	DE-COOL-28-IND	28-day Coolant Flag
271	1	X	DE-MPG-WK-IND	7-day Fuel Flag
272	1	X	DE-MPQ-WK-IND	7-day Oil Flag
273	1	X	DE-COOL-WK-IND	7-day Coolant Flag
274	1	X	FILLER	
TOTAL	274			

The Request Date File also provides the report print option. The option can be one of the following values:

(a) blank, all vehicles printed,

(b) 'Ø1', only vehicles printed with 28-day commodity flags, or

(c) 'Ø3', only vehicles printed with 7-day and/or 28-day commodity flags.

The next function is the formation of a table of values to which 7-day and 28-day commodity values are to be compared. The test values are obtained from the Fleet Constants File. The table is indexed by fleet.

The third function is the building of an extract file from the Vehicle Master File. For each vehicle, an extract record is created in program working storage.

RP053 reads the Vehicle Header (20) Record from the Vehicle Master File. The division assignment and vehicle number are moved to the extract record for this vehicle. The fleet code is used to index the fleet constants table and select commodity test values to be used for this vehicle.

The Vehicle Master File includes several Daily Commodities (24) records for each vehicle. For each 24 record the program ascertains whether its date is within the report period. If not, the record is ignored.

For all 24 records that are within the request period, the following processing is done:

(a) the daily miles are added to the total 28-day miles;

(b) the daily miles are added to the weekly miles counter for the appropriate week; and

(c) the daily fuel, oil, and coolant are added to the appropriate fields in the extract field that corresponds to the date. The extract file record contains 28 fields for each commodity, one for each day of the report period.

After all daily records for the vehicle have been processed, 11 commodity averages are computed. These consist of 28-day averages of fuel, oil, and coolant used and, for each week, 7-day averages of fuel and oil used. Averages are expressed:

(a) Fuel - miles per gallon.

(b) Oil - miles per quart.

(c) Coolant - quarts.

These commodity averages are tested against the fleet constants test values. If an average is out of acceptable limits, an exception flag is set. The exception flags may be set for:

(a) 28-day averages of fuel, oil, and coolant.

(b) 7-day averages of fuel, oil, and coolant consumed in the most recent of the four report weeks.

The next function is to determine whether the extract record is to be sent to the report file. Vehicles whose division assignment is 88 (inactive bus) are not processed. Further determination depends on the report option specified.

If the user has specified one of the two exception reports, only those vehicles with commodity exception flags are processed. If a full report is requested, all extract records are processed.

An extract record to be printed is released to the COBOL internal sort routine. The records are sequenced on division code and vehicle number. This procedure creates the Commodity Usage Report File.

When all vehicles in the system have been extracted, the report file is read and the Commodity Usage Report produced. The report page spacing control is by change of division. Within each division, vehicle numbers are displayed in ascending order.

When all extract records have been printed, program execution terminates.

7.7.4 Error Messages

If an error is detected during program execution, an indicative message is printed and execution terminates. The error messages that may be printed are:

(a) RP053-0300 - INVALID DATA FIELD OR RECORD FOUND IN DATE-RECORD RECORD (CONTENTS OF RECORD)

The date request card was found to have a non-numeric date field.

(b) RP053-0310 - NO DATE RECORD FOUND IN DATE FILE

A date request card was not found in the Request Date File for this report.

(c) RP053 - 0100 - VEHICLE MASTER OUT OF SEQUENCE

The Vehicle Master File was found to be out of sort sequence. A return code of 8 is passed to the system, which prohibits execution of subsequent job steps.

7.7.5 Remarks

RP053 has the capability of reading multiple date request cards. For example, the user could submit two request cards, one for a full report and one for an exception report. The program will produce two separate reports.

7.8 RPØ54 - Bus Analysis Report Generator

The Bus Analysis Report Generator program (RPØ54) is designed to produce three on-demand reports. The program is normally executed monthly. The reports generated are:

(a) Bus Analysis (see Figure 7.8-1): Reported data are arranged in terms of the fleet and the division to which a vehicle belongs. A separate section of the report displays the information listed below for all fleet members assigned to the same division:

(1) fuel and oil consumed during the month in absolute terms and in terms of miles per unit of consumption.

(2) miles operated and the cost of fuel and oil per mile.

(3) oil usage (in terms of miles per quart) during each of the three prior months.

(4) miles operated by the vehicle since the last engine re-ring or overhaul.

The report displays the same information for all fleet members at the division in terms of fleet averages. Fleet total miles operated and fuel and oil consumed are also displayed.

(b) Bus Analysis Summary (see Figure 7.8-2): This one-page report displays the information listed below for each fleet in the system:

(1) fuel and oil consumed during the month in terms of miles per unit of consumption, total cost, and cost per mile operated. Fuel cost per gallon is provided for reference.

(2) miles operated during the month, in total and per bus. The number of buses in the fleet is provided for reference.

(3) average accumulated miles operated.

```
                                                CARD COLUMNS
      1111111111222222222233333333334444444444555555555566666666667777777777888888888999999999
5678901234567890123456789312345678901234567890123456789012345678901234567890123456789012345678

                                          LS-TRANSIT-NAME
                                             BUS ANALYSIS                                  PAGEZZZ9
                                    FOR MONTH ENDING MO/DA/YR                              MO/DA/YR

FLEET XX                                      DIVISION XX                    FUEL     COST=$.999/GAL
                                              ----------                     OIL      COST=$.999/QT
                                                                             COOLANT  COST=$.999/QT

                *-------------- THIS MONTH --------------* OIL MPQ LAST 3 MOS.      MILES
BUS             CENTS                        FUEL  FUEL   OIL  OIL    LAST  2ND   3RD      SINCE
NO.   YR        /MILE      MILES             GALS  MPG    QTS  MPQ    MONTH MONTH MONTH    RE-RING
---   --        -----  -------  -------  -----  ---  ----  -----  -----  -----  -------
Z999  99       Z9.99  ZZ,ZZ9  Z,ZZ9.9  Z9.99  ZZ9.9  Z,ZZ9  Z,ZZ9  Z,ZZ9  Z,ZZ9  Z,ZZ9XXX
Z999  99       Z9.99  ZZ,ZZ9  Z,ZZ9.9  Z9.99  ZZ9.9  Z,ZZ9  Z,ZZ9  Z,ZZ9  Z,ZZ9  Z,ZZ9XXX
Z999  99       Z9.99  ZZ,ZZ9  Z,ZZ9.9  Z9.99  ZZ9.9  Z,ZZ9  Z,ZZ9  Z,ZZ9  Z,ZZ9  Z,ZZ9XXX
Z999  99       Z9.99  ZZ,ZZ9  Z,ZZ9.9  Z9.99  ZZ9.9  Z,ZZ9  Z,ZZ9  Z,ZZ9  Z,ZZ9  Z,ZZ9XXX
Z999  99       Z9.99  ZZ,ZZ9  Z,ZZ9.9  Z9.99  ZZ9.9  Z,ZZ9  Z,ZZ9  Z,ZZ9  Z,ZZ9  Z,ZZ9XXX

Z999  99       Z9.99  ZZ,ZZ9  Z,ZZ9.9  Z9.99  ZZ9.9  Z,ZZ9  Z,ZZ9  Z,ZZ9  Z,ZZ9  Z,ZZ9XXX
Z999  99       Z9.99  ZZ,ZZ9  Z,ZZ9.9  Z9.99  ZZ9.9  Z,ZZ9  Z,ZZ9  Z,ZZ9  Z,ZZ9  Z,ZZ9XXX
Z999  99       Z9.99  ZZ,ZZ9  Z,ZZ9.9  Z9.99  ZZ9.9  Z,ZZ9  Z,ZZ9  Z,ZZ9  Z,ZZ9  Z,ZZ9XXX
Z999  99       Z9.99  ZZ,ZZ9  Z,ZZ9.9  Z9.99  ZZ9.9  Z,ZZ9  Z,ZZ9  Z,ZZ9  Z,ZZ9  Z,ZZ9XXX
Z999  99       Z9.99  ZZ,ZZ9  Z,ZZ9.9  Z9.99  ZZ9.9  Z,ZZ9  Z,ZZ9  Z,ZZ9  Z,ZZ9  Z,ZZ9XXX

Z999  99       Z9.99  ZZ,ZZ9  Z,ZZ9.9  Z9.99  ZZ9.9  Z,ZZ9  Z,ZZ9  Z,ZZ9  Z,ZZ9  Z,ZZ9XXX
Z999  99       Z9.99  ZZ,ZZ9  Z,ZZ9.9  Z9.99  ZZ9.9  Z,ZZ9  Z,ZZ9  Z,ZZ9  Z,ZZ9  Z,ZZ9XXX
                      -------  -------  -----  ----
FLEET XX
TOTALS:               ZZZ,ZZ9 ZZ,ZZ9.9      ZZZZ9.9

AVERAGE        Z9.99 ZZZ,ZZ9  ZZZ,ZZ9 Z9.99  Z9.9 Z,ZZ9  Z,ZZ9  Z,ZZ9  Z,ZZ9
```

FIGURE 7.8-1
FORMAT OF BUS ANALYSES REPORT

```
                                        CARD COLUMNS
    1111111111222222222233333333334444444444555555555566666666667777777778888888889999999999
5678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678

                                     LS-TRANSIT-NAME
                                       BUS ANALYSIS                              PAGE ZZZ9
                                         SUMMARY                                 MO/DA/YR
                                FOR MONTH-ENDING MO/DA/YR

FLEET SUMMARY                                                    OIL     COST=$.999/QT
-------------                                                    COOLANT COST=$.999/QT

 F          *MILES*  *--------------------THIS MONTH--------------------*
 L           ACCUM                          *   BUS    * *COMMODITY COST*
 E  NO      *-----*  *------MILES-----*    * AVERAGE * ------------------
 E  OF       BUS      MONTH      BUS       FUEL    OIL   TOTAL     CENTS    FUEL COST
 T BUSES   AVERAGE    TOTAL    AVERAGE     MPG     MPQ  DOLLARS  PER MI     $/GAL.
-- -----  -------    -----    -------     ----    ----- -------  -------    ------

XX  ZZ9  ZZZZ,ZZ9  Z,ZZZ,ZZ9   ZZ,ZZ9   Z9.99  Z,ZZ9 ZZZZ,ZZ9   Z9.99     9.999
XX  ZZ9  ZZZZ,ZZ9  Z,ZZZ,ZZ9   ZZ,ZZ9   Z9.99  Z,ZZ9 ZZZZ,ZZ9   Z9.99     9.999
XX  ZZ9  ZZZZ,ZZ9  Z,ZZZ,ZZ9   ZZ,ZZ9   Z9.99  Z,ZZ9 ZZZZ,ZZ9   Z9.99     9.999
XX  ZZ9  ZZZZ,ZZ9  Z,ZZZ,ZZ9   ZZ,ZZ9   Z9.99  Z,ZZ9 ZZZZ,ZZ9   Z9.99     9.999
XX  ZZ9  ZZZZ,ZZ9  Z,ZZZ,ZZ9   ZZ,ZZ9   Z9.99  Z,ZZ9 ZZZZ,ZZ9   Z9.99     9.999
XX  ZZ9  ZZZZ,ZZ9  Z,ZZZ,ZZ9   ZZ,ZZ9   Z9.99  Z,ZZ9 ZZZZ,ZZ9   Z9.99     9.999
```


FIGURE 7.8-2
FORMAT OF BUS ANALYSES SUMMARY

(c) Bus Analysis Division/System Summary (see Figure 7.8-3): This one-page report displays the information listed below for each operating division and as system totals:

(1) fuel and oil consumed during the month, in absolute terms and in terms of miles per unit of consumption.

(2) the total cost of fuel and oil and cost per mile operated.

(3) miles operated, in total and per bus. The number of buses assigned to the division and in active service is provided for reference.

7.8.1 System Interfaces

Figure 7.8-4 is a program flowchart. As illustrated, program input consists of four data sets, available from prior job steps. These data sets are:

(a) the Request Date File, CN1510.SRV.S.DATE, created through the execution of the utility program, IEBGENER;

(b) the Daily Constants File, CN1510.SRV.S.DLYCON, maintained by the Data Acceptance program, DA600;

(c) the Fleet Constants File, CN1510.SRV.S.FLTCON, maintained by the Data Acceptance program, DA600; and

(d) the Vehicle Master File, CN1510.SRV.M.VEHICLE, updated by the Vehicle Master File Edit/Update program, DG700.

Program output consists only of print files, which do not interface with any other program.

7.8.2 Program Files

The program creates the Bus Analysis Report File, O-WORK-FILE, during execution. It is an internal file used for data manipulation and sorting, as well as for editing the report. The file is described by file and record specifications (Tables 7.8-1 and 7.8-2).

```
                                                CARD COLUMNS
    1111111111222222222233333333334444444444555555555566666666667777777777888888888
5678901234567890123456789012345678901234567890123456789012345678901234567890123456789

                                LS-TRANSIT-NAME
                                  BUS ANALYSIS                          PAGEZZZ9
                             DIVISION/SYSTEM SUMMARY
                            FOR MONTH ENDING MO/DA/YR                   MO/DA/YR

DIVISION SUMMARY                                                FUEL     COST=$.999/GAL
----------------                                                OIL      COST=$.999/QT
                                                                COOLANT  COST=$.999/QT

                                    *---FUEL----*  *---OIL----* * COMMODITY COST*
 D  NO      *------MILES-----*                BUS            BUS  -----------------
 I  OF        MONTH      BUS      GAL      AVG      QTS      AVG    TOTAL    CENTS
 V  BUSES     TOTAL      AVG     TOTAL     MPG     TOTAL     MPG   DOLLARS  PER MILE
-- -----  ---------  -------  ------  -----  ----------  ---------  --------

XX  ZZ9   Z,ZZZ,ZZ9  ZZ,ZZ9  ZZZ,ZZ9  Z9.99  ZZ,ZZ9  Z,ZZ9  Z,ZZZ,ZZ9  Z9.99

XX  ZZ9   Z,ZZZ,ZZ9  ZZ,ZZ9  ZZZ,ZZ9  Z9.99  ZZ,ZZ9  Z,ZZ9  Z,ZZZ,ZZ9  Z9.99

XX  ZZ9   Z,ZZZ,ZZ9  ZZ,ZZ9  ZZZ,ZZ9  Z9.99  ZZ,ZZ9  Z,ZZ9  Z,ZZZ,ZZ9  Z9.99

XX  ZZ9   Z,ZZZ,ZZ9  ZZ,ZZ9  ZZZ,ZZ9  Z9.99  ZZ,ZZ9  Z,ZZ9  Z,ZZZ,ZZ9  Z9.99


SYSTEM SUMMARY
--------------

    999 ZZZ,ZZZ,ZZ9  ZZ,ZZ9  ZZZ,ZZ9  Z9.99  ZZ,ZZ9  Z,ZZ9  Z,ZZZ,ZZ9  Z9.99
```

FIGURE 7.8-3
FORMAT OF BUS ANALYSES DIVISION/SYSTEM SUMMARY

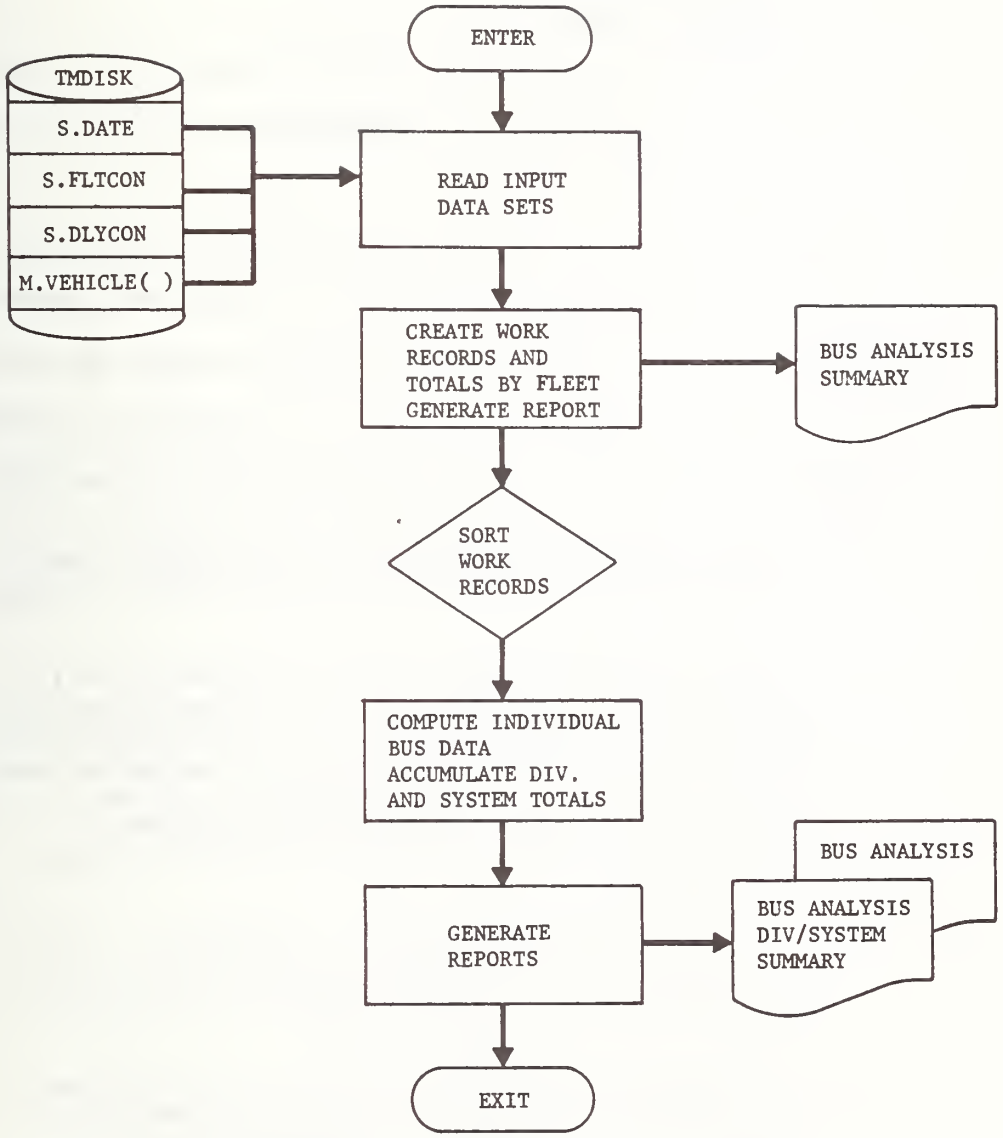


FIGURE 7.8-4
RP054 PROGRAM FLOWCHART

7.8.3 Processing Functions

As illustrated in Figure 7.8-4, input data sets are read. The date file provides report file parameters and the month for which the report is requested.

The Vehicle Master File contains records for every vehicle in the system. Inactive vehicles are assigned to division 88; records for these vehicles are not processed during this program. Report information for each of the other vehicles on file is extracted to create a Bus Analysis Report Record. Procedures to create this record are:

(a) Fleet assignment is identified and used to determine Fuel Type from the Fleet Constants File. Fuel Type is used, in turn, to determine Fuel Price from the Daily Constants File.

(b) Division Assignment at the end of the request month is determined by comparing the division assignment date (I-ASSIGN-DATE) in the Header Record with the report request date. If the current assignment was made after the report date, then the prior division assignment (I-PRIOR-DIV) is used. If the division assignment changed during the report month, the record is flagged (W-CH-DIV-FLAG).

(c) Accumulated mileage (I-MILES-PTD) is adjusted to reflect accumulated miles at the end of the report month. Daily miles values for dates greater than the report date are subtracted from accumulated mileage.

(d) Monthly values, required for display on the report and for the calculation of averages, are obtained from Monthly Summary records and Monthly Commodity Cost records.

(e) Accumulated mileage values in the Engine Re-ring and Engine Overhaul records are compared. The lower value is placed in the extract record, with the appropriate indicator.

TABLE 7.8-1

PROGRAM FILE SPECIFICATION

FILE NAME: Bus Analysis Report File

FD NAME: O-WORK-FILE

DATA SET NAME: &WORKEM

NUMBER OF FORMATS: 1

FILE ORGANIZATION: Records are sequenced by Division, Fleet, and bus number

RECORD NAME	MAX. NO. PER BUS	MIN. NO. PER BUS
W-WORK-REC	1	Ø

TABLE 7.8-2

RECORD SPECIFICATION

RECORD NAME: Bus Analysis Work Record

FILE NAME: O-WORK-FILE

COBOL NAME OF RECORD: O-WORK-REC

RECORD LENGTH: 84

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	W-DIV	Division Number
3	2	XX	W-FLT	Fleet Number
5	2	XX	W-YR	Model Year
7	4	X(4)	W-VEH-NO	Bus Number
11	5	S9(5)	W-MILES-MONTH(1)	Report Month Mileage
16	5	S9(5)	W-MILES-MONTH(2)	Previous Month Mileage
21	5	S9(5)	W-MILES-MONTH(3)	2nd Previous Month Mileage
26	5	S9(5)	W-MILES-MONTH(4)	3rd Previous Month Mileage
31	5	S9(4)V9	W-FUEL-MONTH	Fuel used in report month
36	4	S999V9	W-OIL-MONTH(1)	Oil used in report month
40	4	S999V9	W-OIL-MONTH(2)	Oil used in previous month
44	4	S999V9	W-OIL-MONTH(3)	Oil used in 2nd previous month
48	4	S999V9	W-OIL-MONTH(4)	Oil used in 3rd previous month
52	7	9(7)	W-FUEL-COST-MO	Cost of fuel in report month
59	6	9(6)	W-OIL-COST-MO	Cost of oil in report month
65	5	9(5)	W-COOL-COST-MO	Cost of coolant in report month
70	7	S9(7)	W-ACCUM-MILES	Accumulated mileage
77	1	9	W-CH-DIV-FLAG	Changed Division Flag
78	4	9(4)	W-RERING-MILES	Re-ring/Overhaul miles (000)
82	1	X	W-K	'K' if re-ring mileage used
83	2	XX	W-M	'-M' if overhaul mileage used
TOTAL	84			

After the extract record has been created, it is moved into a temporary storage area.

The records in the temporary storage area are read by the program to develop fleet totals. The required calculations are made and the Bus Analysis Summary report is generated.

The vehicle records are sorted in the following sequence:

(a) Division,

(b) Fleet, and

(c) Vehicle number.

Using the sorted file, the specified calculations are made and the Bus Analysis report generated. The fleet data accumulated earlier are used to aggregate the information in terms of divisions and the total system. The necessary calculations are made and the Bus Analysis Division/System Summary report is generated.

7.8.4 Error Messages

If an error is detected, the appropriate message is moved to the Bus Analysis Print Record File (PRINT-REC) and printed. Error messages are:

(a) RP054-310 - NO DATE FOUND IN DATE FILE.

This message is printed if the program was executed without a valid date card. Program execution is terminated when this is detected.

(b) RP054-310 - NO ' ' FOUND IN CONTROL FILE.

This message is printed if there is no commodity price data in the Daily Constants File. Program execution is not terminated when this is detected. Default values are used for the missing prices.

(c) RP054-310 - NO FUEL TYPE FOUND IN FLT-CONST.

This message is printed if there is no fuel type for a fleet in the Fleet Constants File. Program execution is terminated when this is detected.

(d) RP054-100 - VEHICLE MASTER OUT OF SEQUENCE.

This message is printed if the records in the Vehicle Master File are not sequenced by bus number in ascending order. Program execution is terminated when this condition is detected.

(e) RP054-0300 - INVALID DATA FIELD OR RECORD FOUND IN CONTROL FILE.
DATA FIELD: ' ' VALUE (CONTENTS OF RECORD).

This message is printed if the daily constants record contains invalid characters. Program execution is not terminated. Default values are used for commodity prices.

7.8.5 Remarks

If there is no commodity price data in the Daily Constants File, the following default values are used:

Fuel	$0.172 per gallon
Oil	$0.079 per quart
Coolant	$0.050 per quart

7.9 RPØ55 - Unit Change Candidates Report Generator

The Unit Change Candidates Report Generator program (RPØ55) is designed to produce an on-demand report. The program is normally executed monthly.

The report (see Figure 7.9-1) lists each unit that is a candidate for change and the vehicle on which it is installed. A unit is a candidate if the vehicle has traveled more than a specified threshold mileage since the unit was installed.

This report assists maintenance management to schedule unit change work and to monitor the service life of each unit installed.

7.9.1 System Interfaces

Figure 7.9-2 is a program flowchart. The program reads four data sets from previous job steps. These are:

(a) the Request Date File, CN1510.SRV.S.DATE, created through execution of IBM utility program IEBGENER;

(b) the Unit Threshold File, CN1510.SRV.S.UTTHRS, maintained by the Data Acceptance program DA600;

(c) the Unit Name File, CN1510.SRV.S.UTNAME, maintained by the Data Acceptance program DA600; and

(d) the Vehicle Master File, CN1510.SRV.M.VEHICLE ( ), updated by the Vehicle Master File Edit/Update program, DG700.

```
         1111111111222222222233333333334444444444555555555666666666677777777778888888888999999990CC000C00C0
01234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
                                  UNIT CHANGE CANDIDATES

                                   0201 DIFFERENTIAL
                                    AS OF MO/DA/YR

                                        ***          MILES          ***
                                                  (IN  THOUS.)
                                       SINCE
                    BUS  NO.          CHANGE                    THRESHOLD
                      ZZZ9              ZZ9                       ZZ9
                      ZZZ9              ZZ9                       ZZ9
                      ZZZ9              ZZ9                       ZZ9
                      ZZZ9              ZZ9                       ZZ9
                      ZZZ9              ZZ9                       ZZ9

                      ZZZ9              ZZ9                       ZZ9
                      ZZZ9              ZZ9                       ZZ9
                      ZZZ9              ZZ9                       ZZ9
                      ZZZ9              ZZ9                       ZZ9
                      ZZZ9              ZZ9                       ZZ9

                        .                 .                         .

                        .                 .                         .

          END-OF-REPORT  R-55.
```


FIGURE 7.9-1
FORMAT OF UNIT CHANGE CANDIDATES REPORT

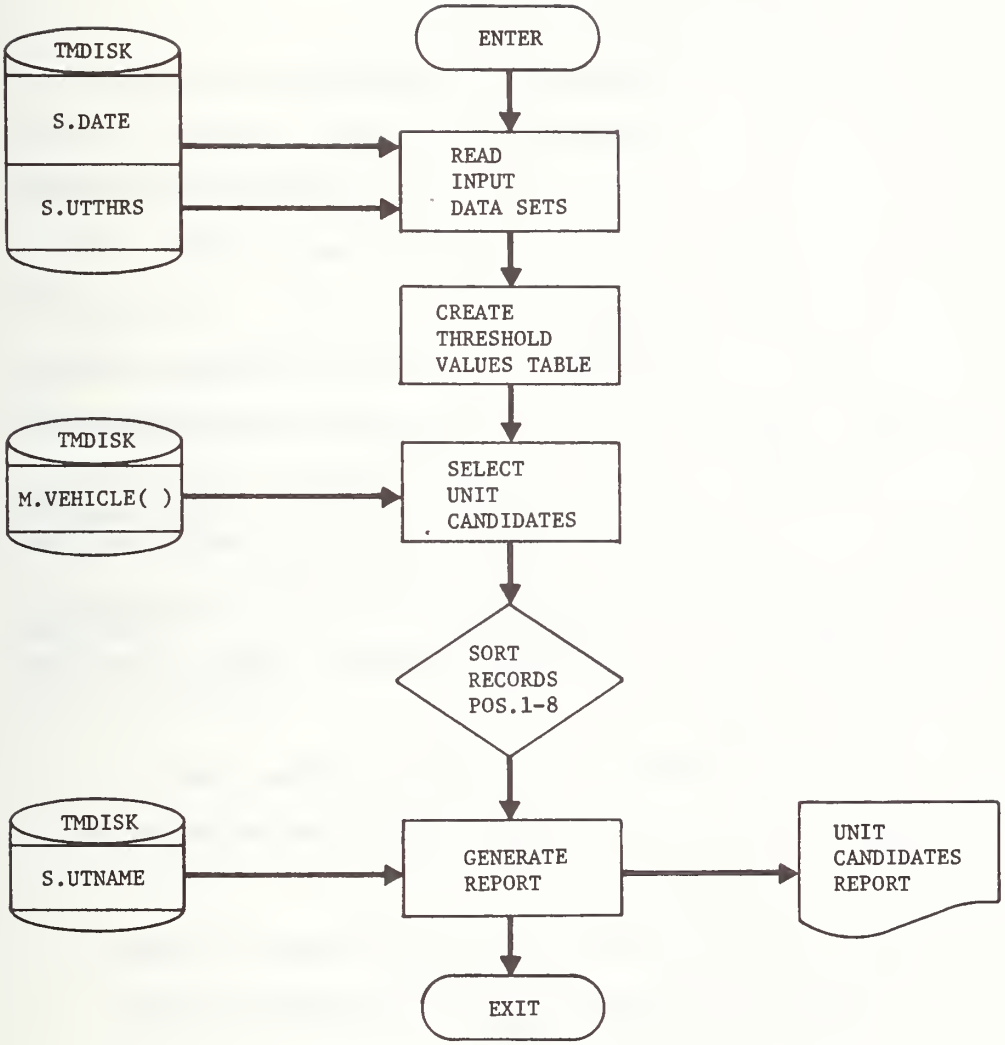


FIGURE 7.9-2
RP055 PROGRAM FLOWCHART

7.9.2 Program Files

During program execution, an internal file, Unit Report File, is created. This file contains unit candidate information extracted from the Vehicle Master File. The Unit Report File is described in file and record specifications (Tables 7.9-1 and 7.9-2).

7.9.3 Processing Functions

An illustrated in Figure 7.9-2, the input data sets are read. The Request Date File provides report control and the date for which the Unit Candidates report is requested. The Unit Threshold File is read into program working storage as an indexed table. This table is used to determine the threshold mileage value for each type of unit for each fleet of vehicles in the system. There is a maximum of 50 types of units.

For each Unit Change (31) Record in the Vehicle Master File, the program creates an extract record using the master file records. This record contains:

(a) the Group-Unit Code from the Unit Change (31) Record.

(b) the vehicle number and the division number from the Vehicle Header (20) Record.

(c) the service miles of the unit installed. This value is calculated by subtracting from Accumulated Miles, in the Accumulated Miles (21) Record, the Accumulated Miles at Last Unit Change Performed in the 31 record.

(d) the threshold value for the unit, retrieved from the table in working storage, using a key consisting of fleet and group-unit code.

TABLE 7.9-1

PROGRAM FILE SPECIFICATION

FILE NAME: Unit Report File

FD NAME: None

DATA SET NAME: &REPORT

NUMBER OF FORMATS: 1 RECORD SIZE: 18

FILE ORGANIZATION: Records are sequenced by: Group-Unit Code
Vehicle Number

RECORD FORMATS

RECORD NAME	MAX. NO. PER BUS	MIN. NO. PER BUS
Report Data Record	50	Ø

TABLE 7.9-2

RECORD SPECIFICATION

RECORD NAME: Report Data Record

FILE NAME: UNIT REPORT FILE

COBOL NAME OF RECORD: REPORT-REC5

RECORD LENGTH: 18

FIELD POS	FIELD LENG	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	4	9999	R-I-D	Group-Unit Code
5	4	9999	R-BUS-NO	Vehicle Number
9	2	99	R-DIV-NO	Division Number
11	3	XXX	R-SER-MILES	Service Miles
14	1	X	FILLER	
15	3	XXX	R-THRES-MILES	Threshold Miles
18	1	X	R-ASTT	Threshold Flag
TOTAL	18			

Service mileage is compared to threshold mileage. If the service miles are greater than the test value, the extract record is released to the Unit Report File via the internal COBOL sort routine. The sort sequence is group-unit code and vehicle number.

After all unit records in the Vehicle Master File have been processed, program control passes to the report generator section. One line entry is printed for each record in the sorted Unit Report File.

The report contains one page for each group-unit code. The associated Unit Name is obtained from the Unit Name File and included in the page heading.

7.9.4 Error Messages

When the RP055 report procedure is executed and no date request record is found in the Request Date File, the following message is printed:

RP055-0300 - NO DATE RECORD FOUND.

If a date record is found, but the date is not numeric the following message is printed:

RP055-0310 - REQUEST DATE NOT NUMERIC.

Program execution is terminated when either error occurs.

7.9.5 Remarks

The program generates the report of unit candidates as of the current status of the Vehicle Master File, not as of the report date.

7.10 RP056 - Brake Status Report Generator

The Brake Status Report Generator program (RP056) is designed to produce an on-demand report. The program is usually executed on a monthly basis.

The report produced is the Brake Status Report (see Figure 7.10-1). This report is designed to assist maintenance management to monitor the brake status of vehicles. Brake drum sizes, the code for the lining material used at last reline, and the accumulated miles at last reline are displayed. Brake drum size is defined as the thickness of metal removed from the drum through turning; expressed threshold values are flagged. This will assist maintenance management in identifying necessary brake work.

Two report options are provided. One option causes all vehicles to be displayed on the Brake Status Report. The second option provides that only those vehicles with threshold flags be printed.

7.10.1 System Interface

Figure 7.10.2 is a system flowchart for program RP056. The program reads several files passed by previous job steps. These files are:

(a) the Request Date File, CN1510.SRV.S.DATE, created by IBM utility IEBGENER;

(b) the Unit Thresholds File, CN1510.SRV.S.UTTHRS, maintained by the Data Acceptance program DA600;

```
                                                
```

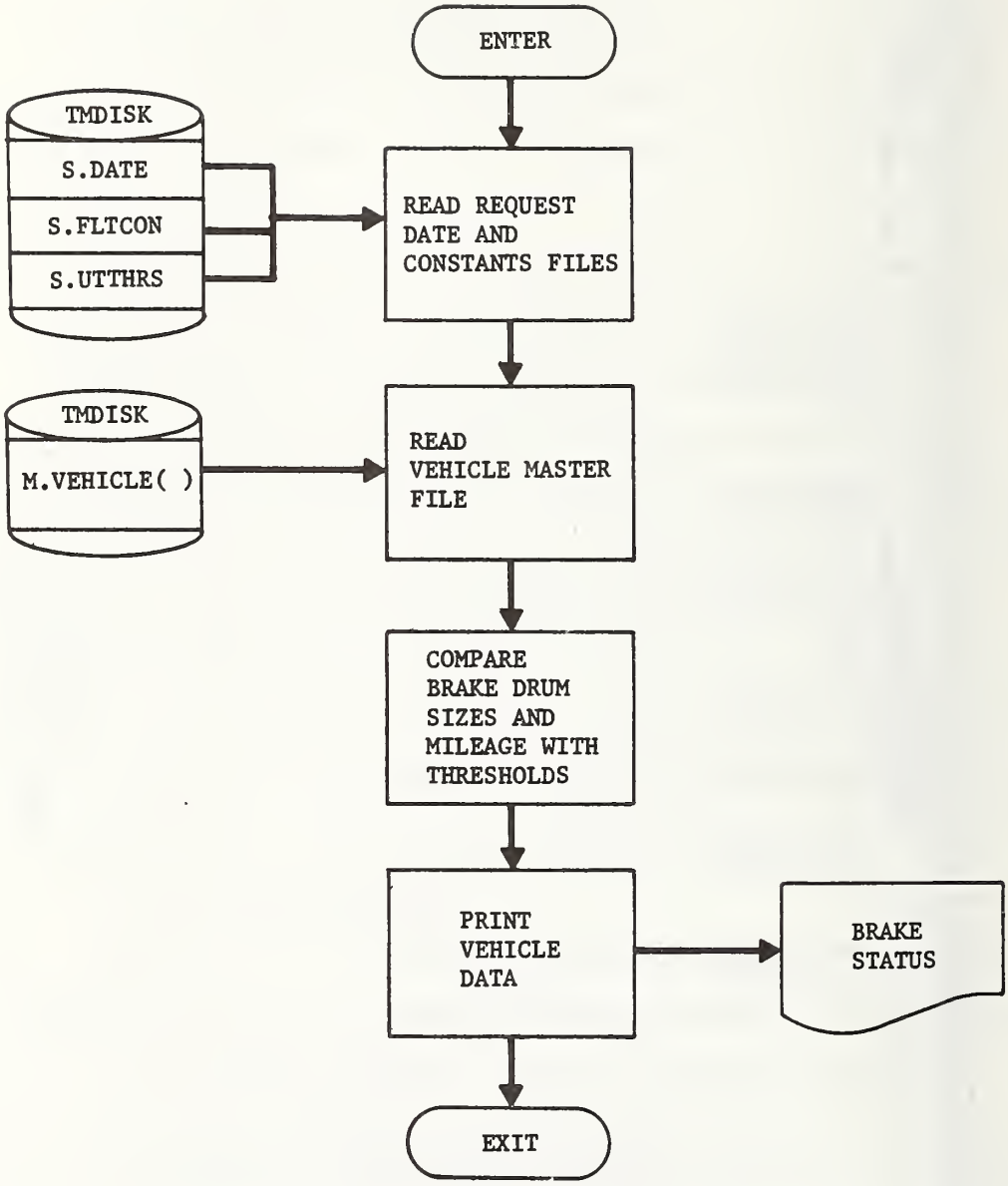


FIGURE 7.10-2
RP056 PROGRAM FLOWCHART

(c) the Fleet Constants File, CN1510.SRV.S.FLTCON, maintained by the Data Acceptance program, DA600; and

(d) the Vehicle Master File, CN1510.SRV.M.VEHICLE, updated by the Vehicle Master Edit/Update program, DG700.

Program output consists of the Brake Status Report. No files are created that are used in other programs of the S/U System.

7.10.2 Program Files

Program RP056 creates no internal files during execution.

7.10.3 Processing Functions

Program RP056 accesses the Date Request File to determine the report date and the report option code. The report option code may be one of two values:

(a) blank, if all vehicles are to be displayed; or

(b) one (1), if only those vehicles over threshold are to be displayed.

RP056 reads two constants files, the Unit Thresholds File and the Fleet Constants File. A table of threshold values for drum sizes and mileage is created from these files. The table is organized by vehicle fleet and resides in program working storage.

For each vehicle in the S/U Vehicle Master File, RP056 reads four file records: the Vehicle Header (20), the Accumulated Miles (21), the Brake Mileage (38), and the Brake Drum (39) records. The fleet code for the vehicle is retrieved from the 20 record. This code is used as an index to scan the threshold table and locate the appropriate values.

The Brake Mileage Record contains the brake mileage and lining code. RP056 subtracts the brake mileage from the total accumulated miles in the Accumulated Miles Record to determine miles since last reline. This result is compared to the mileage threshold from the constants table. If it is over threshold, RP056 flags the mileage field of the Brake Status Report.

If the mileage is over threshold, checks are made on the drum sizes from the Brake Drum Record to determine whether any are over threshold. Those that are over threshold are flagged on the report.

The print option governs whether or not a vehicle is displayed on the Brake Status Report. If the option code is blank, all vehicles are printed. If the code is a one (1), only those vehicles with mileage over threshold are displayed.

The program terminates when all vehicles have been processed.

7.10.4 Error Messages

During program execution, several errors may occur that result in termination of execution. An appropriate error message is printed before termination that identifies the problem. The possible messages are:

(a) RP056-0310 - NO DATE RECORD FOUND IN DATE FILE

This message is printed when a date request card for RP056 was not found in the Request Date File.

(b) RP056-0300 - INVALID DATA FIELD OR RECORD FOUND IN DATE-RECORD

A non-numeric date was found in the Request Date File for program RP056.

(c) RP056-0100 - VEHICLE MASTER FILE OUT OF SEQUENCE

This message is printed when the Vehicle Master File is found to be out of sort sequence. A return code of eight (8) is generated that cancels further system processing.

7.11 RPØ57 - Monthly Tire Mileage Processor

The Monthly Tire Mileage Processor program (RPØ57) is designed to produce a file of daily vehicle mileages for a one-month period. For each vehicle on the SIMS Vehicle Master File, one record is written for each day on which vehicle mileage was recorded. The Monthly Tire Mileage File is read by the Tire Mileage Report Generator, PRTMIL, which prints and punches the mileage data.

This program was designed to be run on a monthly basis.

7.11.1 System Interfaces

Figure 7.11-1 is a program flowchart. Input to RPØ57 consists of two files passed from previous job steps. These files are:

(a) the Request Date File, CN1510.SRV.S.DATE, created through the execution of the IBM utility program IEBGENER; and

(b) the Vehicle Master File, CN1510.SRV.M.VEHICLE ( ), updated through the execution of the Vehicle Master Tire Edit/Update program DG700.

Program output consists of the Monthly Tire Mileage File, CN1510.SRV.M.MILECARD. This file is read by program PRTMIL, the Tire Mileage Report Generator. No printed reports are produced by program RPØ57.

7.11.2 Program Files

No internal files are used by program RPØ57.

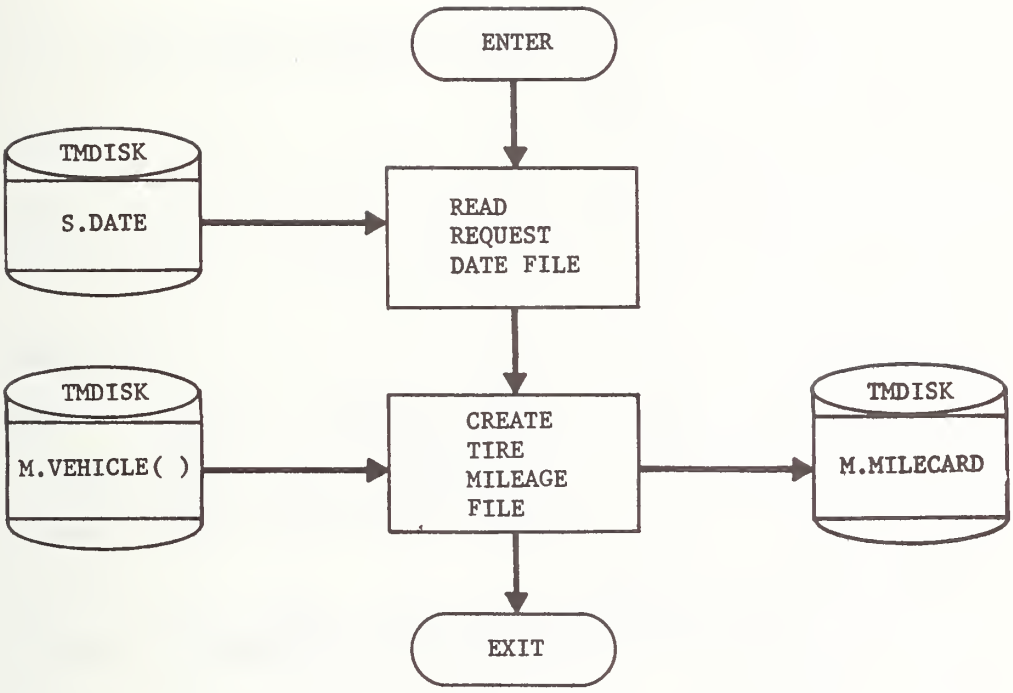


FIGURE 7.11-1
RP057 PROGRAM FLOWCHART

7.11.3 Processing Functions

The Request Date File is read to determine the month for which the program is to be executed.

RPØ57 interrogates each Daily Mileage (24) record from the Vehicle Master File. If the record date is for the month requested, an extracted record is written to the Monthly Tire Mileage File. The extracted record contains the date, vehicle number, daily mileage, and mileage sign. The mileage sign is defined as a space for positive mileage, and a minus sign, '-', for negative. If more than one 24 record is found for a date for a vehicle, the 24 records are summed to produce one extract record.

Program termination occurs when all Daily Mileage (24) records have been processed.

7.11.4 Error Messages

If a date card is not found on the Request Date File for program RPØ57, an error occurs. The following message is printed and execution terminates:

'RP057-0300 - DATE CARD NOT FOUND'

If a date card is found but the date field is not numeric, the following message is printed and execution terminates:

'RP057-0310 - NON-NUMERIC DATE REQUEST'.

7.12 RPØ58 - Units Changed Report Generator

The Units Changed Report Generator program (RPØ58) is designed to assist maintenance management to monitor work performed. The user selects the types of work for which records are maintained. Depending on this selection, RPØ58 generates up to four monthly reports. These reports are:

(a) Inspection Done: This report displays, by inspection schedule, the details of each inspection performed. Accumulated vehicle mileage and mileage since the previous inspection are included. The average service miles between inspections is also displayed. The format of the report is illustrated in Figure 7.12-1.

(b) Units Changed: This report is generated for each type of unit changed during the month. Details of each job performed are displayed, including the accumulated mileage of the vehicle and the service miles of the unit. The average service miles of the unit is also displayed. The format of the report is illustrated in Figure 7.12-2.

(c) Re-ring/Overhaul Jobs: This report lists all engine re-ring and overhaul jobs performed during the month. Accumulated mileage of the vehicle and service miles since the last re-ring or overhaul job are included. The format of the report is illustrated in Figure 7.12-3.

(d) Brake Jobs Done: This report lists all brake reline jobs performed during the month. Each job is described in terms of the wheels on which the work was performed, and the lining material is identified. Accumulated mileage of the vehicle and service miles since the last complete reline job are included. The format of the report is illustrated in Figure 7.12-4.

```
                                                                                                                                1111111111111111111111111111111111
444444444455555555556666666666777777777788888888899999999990000000001111111112222222223
012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789
                    LS-TRANSIT-NAME                                                                                  PAGE ZZZ9

                                                                                                                     MO/DA/YR
              INSPECTIONS DONE FOR MON. 19YR

                                  INSP          ACCUM          SERVICE
  BUS          DATE             DONE          MILES          MILES
  ---          ----             ----          -----          -----

 9999       MO/DA/YR          99-99        Z,ZZZ,ZZ9         ZZZ,ZZ9
 9999       MO/DA/YR          99-99        Z,ZZZ,ZZ9         ZZZ,ZZ9
 9999       MO/DA/YR          99-99        Z,ZZZ,ZZ9         ZZZ,ZZ9
 9999       MO/DA/YR          99-99        Z,ZZZ,ZZ9         ZZZ,ZZ9
 9999       MO/DA/YR          99-99        Z,ZZZ,ZZ9         ZZZ,ZZ9

 9999       MO/DA/YR          99-99        Z,ZZZ,ZZ9         ZZZ,ZZ9
 9999       MO/DA/YR          99-99        Z,ZZZ,ZZ9         ZZZ,ZZ9

  ZZ9 SCHED  99 INSPECTIONS, AVE. SERVICE MILES = ZZZ,ZZ9.9

 9999       MO/DA/YR          99-99        Z,ZZZ,ZZ9         ZZZ,ZZ9
 9999       MO/DA/YR          99-99        Z,ZZZ,ZZ9         ZZZ,ZZ9
 9999       MO/DA/YR          99-99        Z,ZZZ,ZZ9         ZZZ,ZZ9
   .             .              .              .                 .
   .             .              .              .                 .

   .             .              .              .                 .
   .             .              .              .                 .
   .             .              .              .                 .
   .             .              .              .                 .
   .             .              .              .                 .

  ZZ9 SCHED  99 INSPECTIONS, AVE. SERVICE MILES = ZZZ,ZZ9.9
```

FIGURE 7.12-1
FORMAT OF UNITS CHANGED REPORT

```
                                                
```

```
                                                                                                                                1111111111111111111111111111111111
4444444444555555555566666666667777777777888888888899999999990000000000111111111122222222223
0123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890

                        LS-TRANSIT-NAME                                                                                 PAGE ZZZ9

                                                                                                                        MO/DA/YR

              RERING/OVERHAUL JOBS FOR MON. 19YR

                                                          ACCUM          SERVICE
  BUS          TYPE            DATE                      MILES           MILES
  ---          ----            ----                      -----           -----
 9999           RR          MO/DA/YR                  Z,ZZZ,ZZ9       ZZZ,ZZ9
 9999           RR          MO/DA/YR                  Z,ZZZ,ZZ9       ZZZ,ZZ9
 9999           OH          MO/DA/YR                  Z,ZZZ,ZZ9       ZZZ,ZZ9
 9999           RR          MO/DA/YR                  Z,ZZZ,ZZ9       ZZZ,ZZ9
 9999           RR          MO/DA/YR                  Z,ZZZ,ZZ9       ZZZ,ZZ9

 9999           OH          MO/DA/YR                  Z,ZZZ,ZZ9       ZZZ,ZZ9
 9999           RR          MO/DA/YR                  Z,ZZZ,ZZ9       ZZZ,ZZ9
 9999           OH          MO/DA/YR                  Z,ZZZ,ZZ9       ZZZ,ZZ9
 9999           RR          MO/DA/YR                  Z,ZZZ,ZZ9       ZZZ,ZZ9
 9999           RR          MO/DA/YR                  Z,ZZZ,ZZ9       ZZZ,ZZ9

 9999           OH          MO/DA/YR                  Z,ZZZ,ZZ9       ZZZ,ZZ9
   .            .               .                         .               .
   .            .               .                         .               .
   .            .               .                         .               .
```

FIGURE 7.12-3
FORMAT OF RERING/OVERHAUL JOBS REPORT

```
                                                
```

7.12.1 System Interfaces

Figure 7.12-5 is a program flowchart. As illustrated, program input consists of three data sets, available from prior job steps. These data sets are:

(a) the Request Date File (CN1510.SRV.S.DATE), created through the execution of the IBM utility program IEBGENER;

(b) the Unit Name File (CN1510.SRV.S.UTNAME), maintained by the Data Acceptance program DA600; and

(c) the Transaction Master File (CN1510.SRV.M.TRANTAPE), updated through the execution of Transaction Master File Update program DT200.

Program output consists of print files that do not interface with any other program.

7.12.2 Program Files

During program execution, a file is created and used within the program. This file, Units Changed Report File, is described in File and Record Specification sheets (Tables 7.12-1 thru 7.12-6).

7.12-3 Processing Functions

As illustrated in the flowchart (Figure 7.12-5), the input data sets are read. The date file provides report control and the date for which the report is requested. Unit Names and Group-Unit Codes are arranged in a table in program working storage. The Units Changed Report records (O-TRH-INSP, O-TRH-UNIT-CHANGED, O-TRH-RR-OVH, O-TRH-BRAKE) are created from the Transaction History File records.

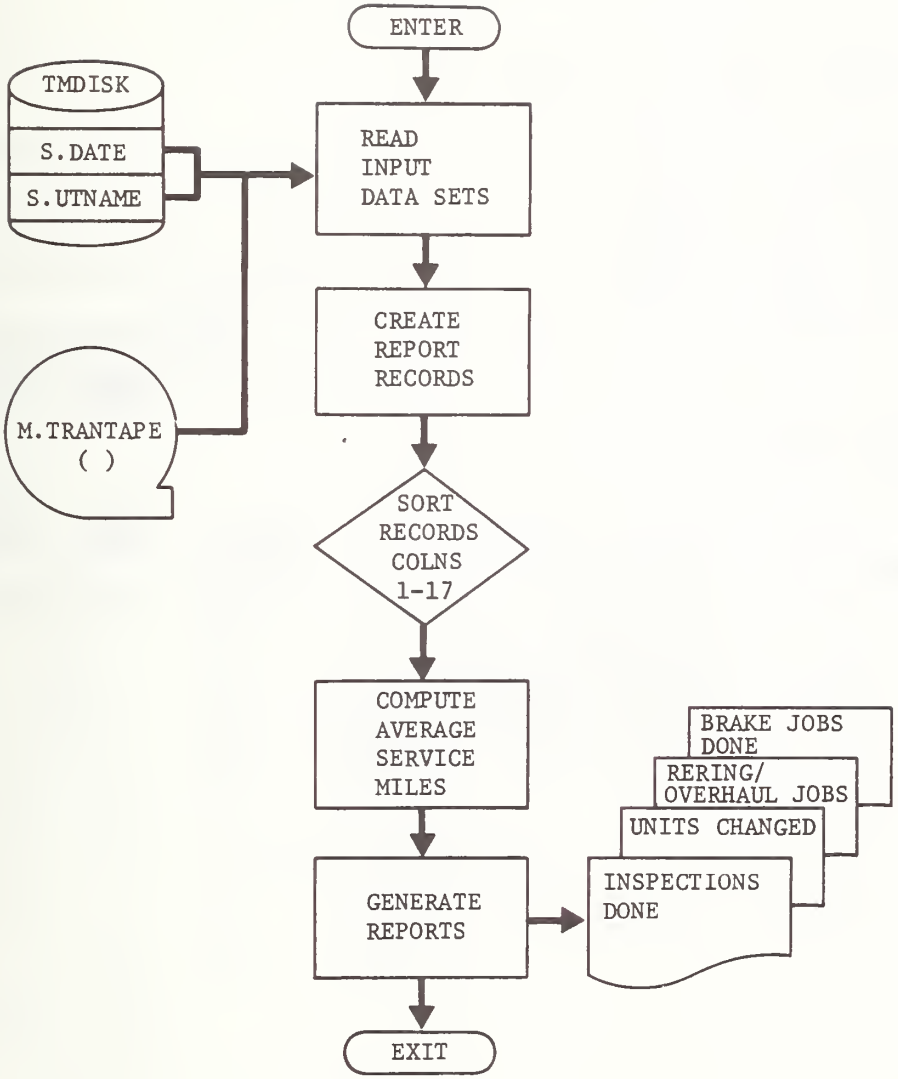


FIGURE 7.12-5
PR058 PROGRAM FLOWCHART

TABLE 7.12-1

PROGRAM FILE SPECIFICATION

FILE NAME: Units Changed Report File

FD NAME: O-TRANS-FILE

DATA SET NAME: &OSORT

NUMBER OF RECORD FORMATS: 5 RECORD SIZE: 42 Characters

FILE ORGANIZATION: Records are sequenced by: Sort Code
Unit Identification
Bus Number
Transaction Date

RECORD FORMATS

FORMAT CODE	RECORD NAME	MAX. NO. PER BUS	MIN. NO. PER BUS
29	Inspection Record	U	Ø
31	Unit Changed Record	U	Ø
40	Rering/Overhaul Record	U	Ø
50	Brake Job Record	U	Ø
50	Partial Brake Job Record	U	Ø

TABLE 7.12-2

RECORD SPECIFICATION

RECORD NAME: Inspection Record

FILE NAME: Units Changed Report File

COBOL NAME OF RECORD: O-TRH-INSP

RECORD FORMAT CODE: 29

RECORD LENGTH: 42 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	99	SORT-CODE	Sort Code
3	2	99	UNIT-1	Inspection Schedule
5	2	99	UNIT-2	Value Zeros
7	4	9999	BUS-NO	Vehicle Number
11	2	99	TRANS-YR	Transaction Year
13	2	99	TRANS-MO	Transaction Month
15	2	99	TRANS-DAY	Transaction Day
17	2	99	FMT-CODE	Record Format Code
19	1	9	MODIFIER	Modifier Code Value Zero
20	7	S9(7)	ACC-MILES-INSP	Accumulated Miles
27	6	S9(6)	SRV-MILES-INSP	Service Miles
33	2	99	INSP-SCHED	Inspection Schedule
35	2	99	INSP-STEP	Inspection Step
37	6	X(6)	FILLER	
TOTAL	42			

TABLE 7.12-3

RECORD SPECIFICATION

RECORD NAME: Units Changed Record

FILE NAME: Units Changed Report File

COBOL NAME OF RECORD: O-TRH-UNIT-CHANGED

RECORD FORMAT CODE: 31

RECORD LENGTH: 42 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	99	SORT-CODE	Sort-Code
3	2	99	UNIT-1	Group-Number
5	2	99	UNIT-2	Unit-Number
7	4	9999	BUS-NO	Vehicle Number
11	2	99	TRANS-YR	Transaction Year
13	2	99	TRANS-MO	Transaction Month
15	2	99	TRANS-DAY	Transaction Day
17	2	99	FMT-CODE	Record Format Code
19	2	99	MODIFIER	Modifier Code Value Zero
20	7	S9(7)	ACC-MILES-UNIT	Accumulated Miles
27	6	S9(6)	SRV-MILES-UNIT	Service Miles
33	10	X(10)	FILLER	
TOTAL	42			

TABLE 7.12-4

RECORD SPECIFICATION

RECORD NAME: Rering/Overhaul Record

FILE NAME: Units Changed Report File

COBOL NAME OF RECORD: O-TRH-RR-OVH

RECORD FORMAT CODE: 40

RECORD LENGTH: 42 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	99	SORT-CODE	Sort Code
3	2	99	UNIT-1	Value Zeros
5	2	99	UNIT-2	Value Zeros
7	4	9999	BUS-NO	Vehicle Number
11	2	99	TRANS-MO	Transaction Year
13	2	99	TRANS-MO	Transaction Month
15	2	99	TRANS-DAY	Transaction Day
17	2	99	FMT-CODE	Format Code
19	1	9	MODIFIER	Modifier Value Zero
20	7	S9(7)	ACC-MILES-RROH	Accumulated Miles
27	6	S9(6)	SUC-MILES-RROH	Service Miles
33	3	X(3)	TYPE-RROH	Type of Engine Job
36	7	X(7)	FILLER	
TOTAL	42			

TABLE 7.12-5

RECORD SPECIFICATION

RECORD NAME: Brake Job Record

FILE NAME: Units Changed Report File

COBOL NAME OF RECORD: O-TRH-BRAKE

RECORD FORMAT CODE: 50

RECORD LENGTH: 42 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	99	SORT-CODE	Sort-Code
3	2	99	UNIT-1	Value Zeros
5	2	99	UNIT-2	Value Zeros
7	4	9999	BUS-NO	Vehicle Number
11	2	99	TRANS-YR	Transaction Year
13	2	99	TRANS-MO	Transaction Month
15	2	99	TRANS-DAY	Transaction Day
17	2	99	FMT-CODE	Record Format Code
19	1	9	MODIFIER	Modifier Code Value Zero
20	7	S9(7)	ACC-MILES-BRK	Accumulated Miles
27	6	S9(6)	SUC-MILES-BRK	Service Miles
33	5	X(5)	TYPE-BRK	Type Brake Job
38	4	X(4)	LINING-CODE	Lining Code
42	1	X	FILLER	
TOTAL	42			

TABLE 7.12-6

RECORD SPECIFICATION

RECORD NAME: Partial Brake Job Record

FILE NAME: Units Changed Report File

COBOL NAME OF RECORD: O-TRH-BRAKE-PARTIAL

RECORD FORMAT CODE: 50

RECORD LENGTH: 42 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	99	SORT-CODE	Sort Code
3	2	99	UNIT-1	Value Zeros
5	2	99	UNIT-2	Value Zeros
7	4	9999	BUS-NO	Vehicle Number
11	2	99	TRANS-YR	Transaction Year
13	2	99	TRANS-MO	Transaction Month
15	2	99	TRANS-DAY	Transaction Day
17	2	99	FMT-CODE	Format Code
19	1	9	MODIFIER	Modifier Code Value 1
20	7	S9(7)	PARTIAL-ACC-MILES-BRK	Accumulated Miles
27	6	X(6)	FILLER	
33	5	X(5)	PARTIAL-TYPE-BRK	Type Brake Job
38	5	X(5)	FILLER	
TOTAL	42			

Report Records are created from input file records within the report period:

(a) Each Inspection record and Unit Change record is reformatted.

(b) Engine Rering and Engine Overhaul records are used to create one Rering/Overhaul report record.

(c) Brake Mileage and Brake Drum records are used to produce one Brake Job report record.

(d) Sort codes are generated depending on the type of record being processed.

After the report records are created, they are released, via the internal COBOL sort. The records are sorted in the following sequence:

(a) Sort Code,

(b) Group-Unit Code (Unit Change records only),

(c) Bus Number, and

(d) Transaction date.

The average service mileage is computed for each Inspection Schedule, and for each Unit Changed during the month. Unit Name is provided for each unit changed. The reports are printed.

7.12.4 Error Messages

If an error is detected, the appropriate message is printed. The error messages are:

(a) 'RPØ58 - Ø100 - NO DATE RECORD FOUND'

This message is printed if no date card is found. The program is terminated.

(b) 'RPØ58 - Ø2ØØ - DATE RECORD IS NOT NUMERIC'

This message is printed if the date card contains non-numeric characters. The program is terminated.

7.13 RP059 - Unit Change Status Report Generator

The Unit Change Status Report Generator (RP059) is designed to produce the Unit Change Status Report (see Figure 7.13-1). This report enables the maintenance manager to monitor the status of major units on each vehicle and to schedule maintenance of these units.

7.13.1 System Interfaces

Figure 7.13-2 is a program flowchart. As illustrated, program input consists of two data sets, available from prior job steps.

These data sets are: .

(a) the Request Date File (CN1510.SRV.S.DATE), created through the execution of the IBM utility program IEBGENER; and

(b) the Vehicle Master File (CN1510.SRV.M.VEHICLE), updated through the execution of the Edit/Update program DG700.

Program output consists of print files that do not interface with any other program.

7.13.2 Program Files

During program execution, a file is created and used within the program. This file is described in File and Record Specification sheets, Tables 7.13-1 through 7.13-3.

7.13.3 Processing Functions

As illustrated in Figure 7.13-2, the input data sets are read. The date file provides report control and the date for which the report is requested.

```
                                                
```

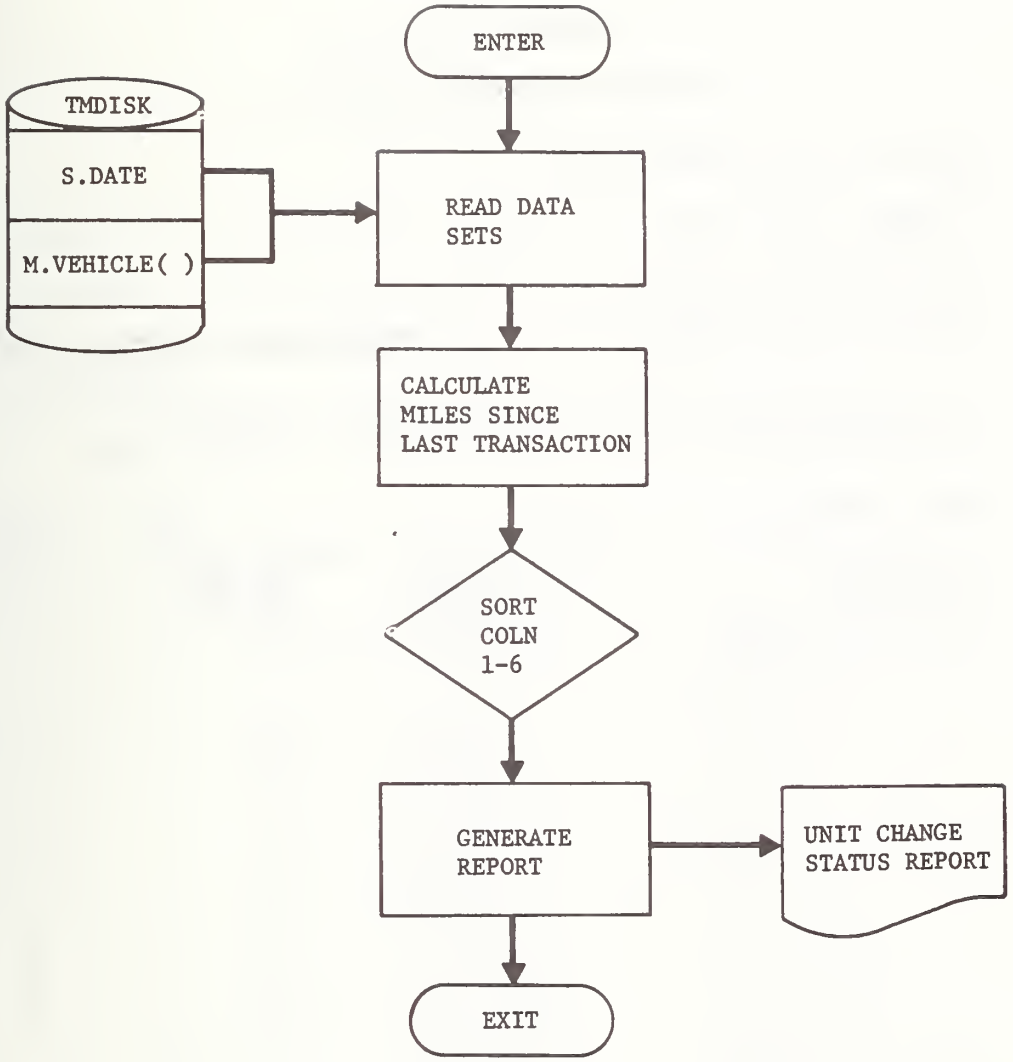


FIGURE 7.13-2
RP059 PROGRAM FLOWCHART

TABLE 7.13-1

PROGRAM FILE SPECIFICATION

FILE NAME: Unit Report File

FD NAME: REPORT-FILE

DATA SET NAME: &REPORT

NUMBER OF RECORD FORMATS: 1 RECORD SIZE: 62 Characters (RP059A)
110 Characters (RP059B)

FILE ORGANIZATION: Records are sequenced by: Division
Vehicle Number

RECORD FORMATS

RECORD NAME	MAX. NO. PER BUS	MIN. NO. PER BUS
Unit Report Record	1	1

TABLE 7.13-2

RECORD SPECIFICATION

RECORD NAME: Unit Report Record

FILE NAME: Unit Report File (RP059A)

COBOL NAME OF RECORD: REPT-DATA

RECORD LENGTH: 62 Characters

FIELD POS.	FIELD LENG	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	99	WS-DIV-NO	Division Number
3	4	9999	WS-BUS-NO	Vehicle Number
7	7	S9(7)	WS-ACC-MILES	Accumulated Miles
				Service Miles of:
14	3	999	WS-DIFF	Differential
17	3	999	WS-FT-LIN	Front Brake Lining
20	3	999	WS-RR-LIN	Rear Brake Lining
23	3	999	WS-CLUTCH	Clutch
26	3	999	WS-STARTER	Starter
29	3	999	WS-GEN	Generator
32	3	999	WS-BLOWER	Blower
35	3	999	WS-OH-SEMI	Overhaul Semi
38	3	999	WS-OH-MAJOR	Overhaul Major
41	3	999	WS-TRANS	Transmission
44	3	999	WS-AIR-COMP	Air Compressor
47	3	999	WS-DIA-FRT	Diaphragm Front
50	3	999	WS-RR-SIN	Diaphragm Rear Single
53	3	999	WS-RR-DBLE	Diaphragm Rear Double
56	3	999	WS-APPL-VAL	Brake Application Valve
59	3	999	WS-RL-VAL	Brake Relay Valve
62	1	X	FILLER	
TOTAL	62			

TABLE 7.13-3

RECORD SPECIFICATION

RECORD NAME: Unit Report Record

FILE NAME: Unit Report File (RP059B)

COBOL NAME OF RECORD: REPT-DATA

RECORD LENGTH: 110 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	99	WS-DIV-NO	Division number
3	4	9(4)	WS-BUS-NO	Vehicle number
7	7	S9(7)	WS-ACC-MILES	Accumulated miles Service Miles and Job Month Designator
14	1	X	FILLER	
15	4	9999	WS-DIFF	Differential
19	2	XX	WS-DIFF-MY	
21	4	9999	WS-FT-LIN	Front Brake Lining
25	2	XX	WS-FT-LIN-MY	
27	4	9999	WS-RR-LIN	Rear Brake Lining
31	2	XX	WS-RR-LIN-MY	
33	4	9999	WS-CLUTCH	Clutch
37	2	XX	WS-CLUTCH-MY	
39	4	9999	WS-STARTER	Starter
43	2	XX	WS-STARTER-MY	
45	4	9999	WS-GEN	Generator
49	2	XX	WS-GEN-MY	
51	4	9999	WS-BLOWER	Blower
55	2	XX	WS-BLOWER-MY	
57	4	9999	WS-OH-SEMI	Overhaul Semi
61	2	XX	WS-OH-SEMI-MY	
63	4	9999	WS-OH-MAJOR	Overhaul Major
67	2	XX	WS-OH-MAJOR-MY	
69	4	9999	WS-TRANS	Transmission
73	2	XX	WS-TRANS-MY	
75	4	9999	WS-AIR-COMP	Air Compressor
79	2	XX	WS-AIR-COMP-MY	
81	4	9999	WS-DIA-FRT	Diaphragm Front
85	2	XX	WS-DIA-FRT-MY	
87	4	9999	WS-RR-SIN	Diaphragm Rear Single
91	2	XX	WS-RR-SIN-MY	

TABLE 7.13-3 (Concluded)

RECORD SPECIFICATION

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
93	4	9999	WS-RR-DBLE	Diaphragm Rear Double
97	2	XX	WS-RR-DBLE-MY	
99	4	9999	WS-APPL-VAL	Brake Application Valve
103	2	XX	WS-APPL-VAL-MY	
105	4	999	WS-RL-VAL	Brake Relay Valve
109	2	XX	WS-RL-VAL-MY	
TOTAL	110			

The Vehicle Master File provides report information:

(a) The division to which the vehicle is assigned (I-ASSIGNMENT) is identified and stored for use in sorting the report records.

(b) For each unit record, Accumulated Miles at Change (I-UNIT-CHG-MILES) is subtracted from the accumulated mileage of the vehicle (I-MILES-PTD) to determine service miles of the unit. The result is divided by 1,000 to express service miles to the degree of precision required for the report.

(c) The month and year in which the unit was installed on the vehicle. This information is converted to a two-character date indicator. This indicator consists of a letter (A thru M, excluding I) that represents the month during the year when the unit change was performed and of the last digit of that year.

This procedure is followed for all Unit Changed records, and for Engine Rering and Engine Overhaul records if such records are on file.

The report records created are sorted in the sequence shown below and the report is printed. Sort sequence is by division and vehicle number.

7.13.4 Error Message

If the program is executed without a date card, an error message is printed. The error message is:

'RP059-0310 - NO DATE RECORD FOUND IN DATE FILE'

If a date record is found but the date is non-numeric, the following message is printed:

'RP059-0320 - DATE REQUEST NOT NUMERIC'

In either case, program execution is terminated.

7.14 RP062 - Constants Files Listings Generator

The Constants Files Listings Generator program, RP062, is designed to provide a capability to review the contents of the four system constants files. The one program generates a separate listing of the records in each file. The records are reformatted for the purpose of printing. This facilitates the use and interpretation of the listings, which are:

(a) Fleet Constants File (Figure 7.14-1);

(b) Unit Name File (Figure 7.14-2);

(c) Daily Constants File (Figure 7.14-3); and

(d) Unit Threshold Values (Figure 7.14-4)

7.14.1 System Interfaces

Figure 7.14-5 is a program flowchart. As illustrated, program input consists of the four system constants files, all of which are maintained by the Data Acceptance program, DA600. These data sets are:

(a) the Fleet Constants File, CN1510.SRV.S.FLTCON.

(b) the Unit Name File, CN1510.SRV.S.UTNAME.

(c) the Daily Constants File, CN1510.SRV.S.DLYCON.

(d) the Unit Threshold File, CN1510.SRV.S.UTTHRS.

Program output consists of print files that do not interface with any other program.

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                                                CARO COLUMNS
                                                
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CARD COLUMNS

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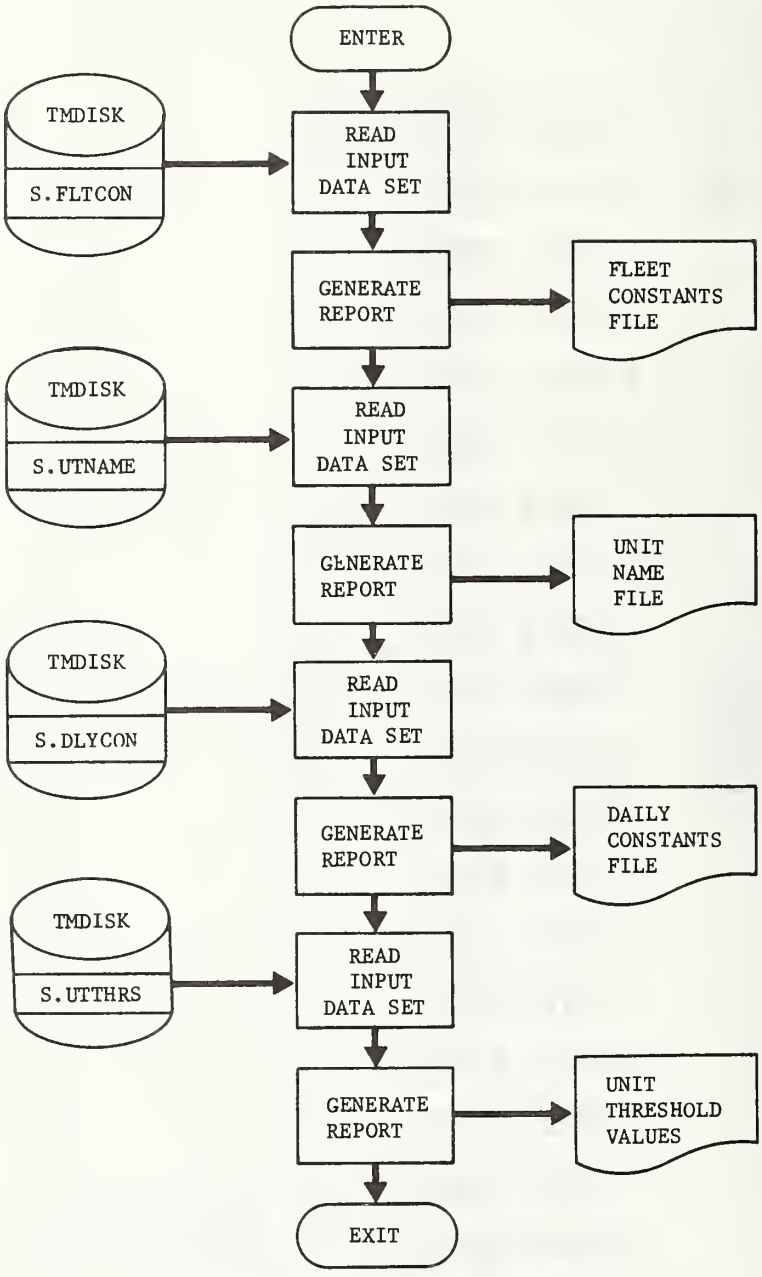

FIGURE 7.14-5
RP062 PROGRAM FLOWCHART

7.14.2 Program Files

RP062 creates no internal file during execution.

7.14.3 Processing Functions

As illustrated in the program flowchart, each system constants file is read in turn and the formatted listing generated in accord with the report definition.

7.14.4 Error Messages

No error messages are generated by this program.

7.15 RP064 - Coach History Report Generator

The Coach History Report Generator program (RP064) is designed to produce an on-demand report. This report provides management with the capability to review the maintenance history of individual coaches. The history consists of vehicle inspections and unit changes performed. Unit changes are defined to include engine re-rings, engine overhauls, and brake reline jobs.

The report displays information as specified by the user through request cards. The number of request cards, used to specify the request is unlimited. Through these cards the user specifies the coaches for which the report is to be generated and the types of records to be displayed. Coach options are:

(a) One or more individual coaches,

(b) One or more series of coaches, and

(c) All coaches.

Within the latter two options, the user may limit the request to coaches assigned to one or more divisions, up to a maximum of 20 divisions. Record type options are:

(a) Vehicle inspection records only,

(b) Unit change records only, and

(c) Vehicle inspection and unit change records.

The report (see Figure 7.15-1) contains a separate section for each coach specified in the request. Inspections, if requested, are displayed first and then unit change jobs, by group-unit code in

CARD COLUMNS

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```

ascending order. Within each class of job, the information is displayed in chronological order.

The detail displayed on each line consists of the identification of the job performed, the date of the job, the accumulated miles traveled by the coach at that time, and the mileage traveled since the last job of the same nature.

7.15.1 System Interfaces

Figure 7.15-2 is a program flowchart. As illustrated, program input consists of the Vehicle Request Card File and of five data sets, available from prior job steps. These data sets are:

(a) the Request Date File, CN1510.SRV.S.DATE, created through the execution of IBM utility program, IEBGENER;

(b) the Vehicle Master File, CN1510.SRV.M.VEHICLE( ), updated by the Vehicle Master File Edit/Update program, DG700;

(c) the Daily Constants File, CN1510.SRV.S.DLYCON, maintained by the Data Acceptance program, DA600;

(d) the Unit Name File, CN1510.SRV.S.UTNAME, maintained by the Data Acceptance program, DA600; and

(e) the Transaction Master File, CN1510.SRV.M.TRANTAPE ( ), updated by the Transaction Master File Update program, DT200.

Program output consists of a print file that does not interface with any other program.

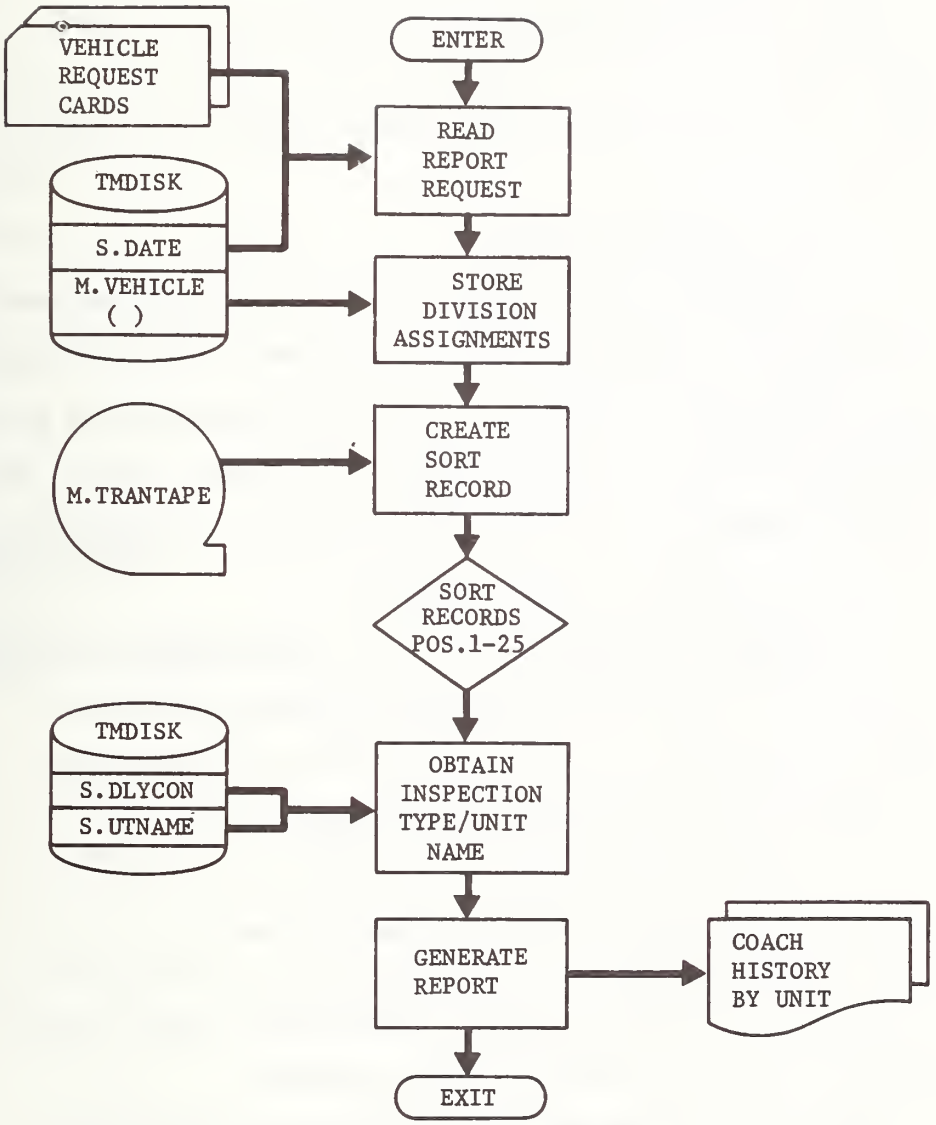

FIGURE 7.15-2
RP064 PROGRAM FLOWCHART

7.15.2 Program Files

During program execution, one file is created. This file, REPT-FILE, is used for data manipulation and sorting. The file is described in file and record specifications (Tables 7.15-1 and 7.15-2.

7.15.3 Processing Functions

As illustrated in the flowchart (Figure 7.15-2), the Request Date File and the vehicle request cards are read to determine report requirements. The information defining these requirements is placed in working storage. The Vehicle Master File is read to obtain the division assignments of all the coaches on file. The division assignments are placed in working storage.

The Transaction Master File is read and sort records created in accord with the report requirements specified by the user in the vehicle request cards. The basic functions performed are:

(a) Bus number, group-unit code, job date, accumulated miles, service miles, and job reason code are moved to the sort record.

(b) The appropriate division number is moved to the sort record.

Additional functions performed when specific types of records are read in from the Transaction Master File are:

(a) Inspection records: The group-unit code field is zero filled and the inspection schedule-step code is moved to the brake lining code field. After the records are sorted, the inspection schedule-step code is moved to the group-unit code field prior to printing.

TABLE 7.15-1

PROGRAM FILE SPECIFICATION

FILE NAME: Coach History Report File

FD NAME: REPT-FILE

DATA SET NAME: &REPORT

NUMBER OF RECORD FORMATS: 1 RECORD LENGTH: 56 Characters

FILE ORGANIZATION: Records are sequenced by: Division Number
Bus Number
Special Sort Date
Group-unit Code (A)
Record Format Code
Job Date

RECORD FORMATS

FORMAT CODE	RECORD NAME	MAX. NO PER BUS	MIN. NO. PER BUS
	Coach History Report Record	U	0

Note: (A) Group-unit code has a value of zeros in inspection records.

TABLE 7.15-2

RECORD SPECIFICATION

RECORD NAME: Coach History Report Record

FILE NAME: Coach History Report File

COBOL NAME OF RECORD: REPT-REC1

RECORD LENGTH: 56 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	SR-DIV-NO	Division number
3	4	X(4)	SR-BUS-NO	Coach number
7	6	X(6)	SS-DATE	Special sort date
13	2	XX	SR-GRP-NO	Vehicle group code
15	2	XX	SR-UNT-CODE	Unit code
17	1	X	SR-GU-SEQ	Group-unit record sequence code
18	2	XX	SR-FOR-NO1	Record format code
20	6	X(6)	SR-JOB-DATE	Job date
26	7	S9(7)	SR-ACC-MILES	Accumulated vehicle miles
33	7	S9(7)	SR-SER-MILES	Service miles
40	1	X	SR-REA-CODE	Reason code
41	3	XXX	SR-RF-DRUM	Brake drum size- - right front
44	3	XXX	SR-LF-DRUM	- left front
47	3	XXX	SR-RR-DRUM	- right rear
50	3	XXX	SR-LR-DRUM	- left rear
53	4	X(4)	SR-LIN-CODE	Brake lining code
TOTAL	56			

(b) Engine re-ring records: The transaction record does not contain a group-unit code; the special value '0898' is moved to that field in the sort record.

(c) Engine overhaul records: The transaction record does not contain a group-unit code; the special value '0899' is moved to that field in the sort record.

(d) Brake mileage records: The transaction record does not contain a group-unit code; the special value '0499' is moved to that field in the sort record. Job date is moved to the special sort date field in the sort record. Brake lining code is also moved to the sort record.

(e) Brake drum records: The transaction record does not contain a group-unit code; the special value '0499' is moved to that field in the sort record. Brake drum sizes are also moved to the sort record.

When the sort record has been created, it is released to the internal sort routine. The records are sorted in the following sequence:

(a) Division number,

(b) Bus number,

(c) Special sort date,

(d) Group-unit code,

(e) Record format code, and

(f) Job date.

The sorted records are output to the report file and the report is generated.

7.15.4 Error Messages

If an error is detected, the appropriate message is generated. Error messages are:

(a) RP064--0310 - NO DATE RECORD FOUND IN DATE FILE

This message is printed if the program is executed without a date request card. Program execution is terminated.

(b) RP064--0300 - INVALID RECORD FOUND IN DATE FILE

This message is printed if the date card contains a non-numeric date. Program execution is terminated.

(c) NO VALID NAME ON FILE

This message is printed in lieu of the unit name if it is not on file. Program execution is not terminated.

(d) BUS NUMBER OUT OF SEQUENCE, REQUEST CARD BYPASSED

This message is printed if a vehicle request card is out of sequence. Program execution is not terminated.

7.15.5 Remarks

The vehicle request cards must be submitted in increasing order by vehicle number. Cards out of sequence are bypassed.

7.16 RP066 - Inspection Planning Report Generator

The Inspection Planning Report Generator program, RP066, is designed to provide management with information that will assit in the scheduling and control of coach inspections. Execution of the program is normally requested weekly, at the beginning of the week.

The two basic functions performed are:

(a) the prediction of the number of days before the next inspection is due for all active coaches.

(b) the generation of a report to display to management information for those coaches with an inspection due in the next 14 days.

The report contains a separate section for each division. In each report section (see Figure 7.16-1), reported data are arranged in terms of the number of days, in ascending order, before the next inspection is due. The information displayed consists of the coach number, the estimated number of days before the next inspection is due, the schedule-step code and type of inspection due, the mileage traveled since the last inspection, and the estimated number of miles since inspection that the coach will have traveled in another 14 days if no action is taken.

7.16.1 System Interfaces

Figure 7.16-2 is a program flowchart. As illustrated, the program reads three data sets, available from prior job steps.

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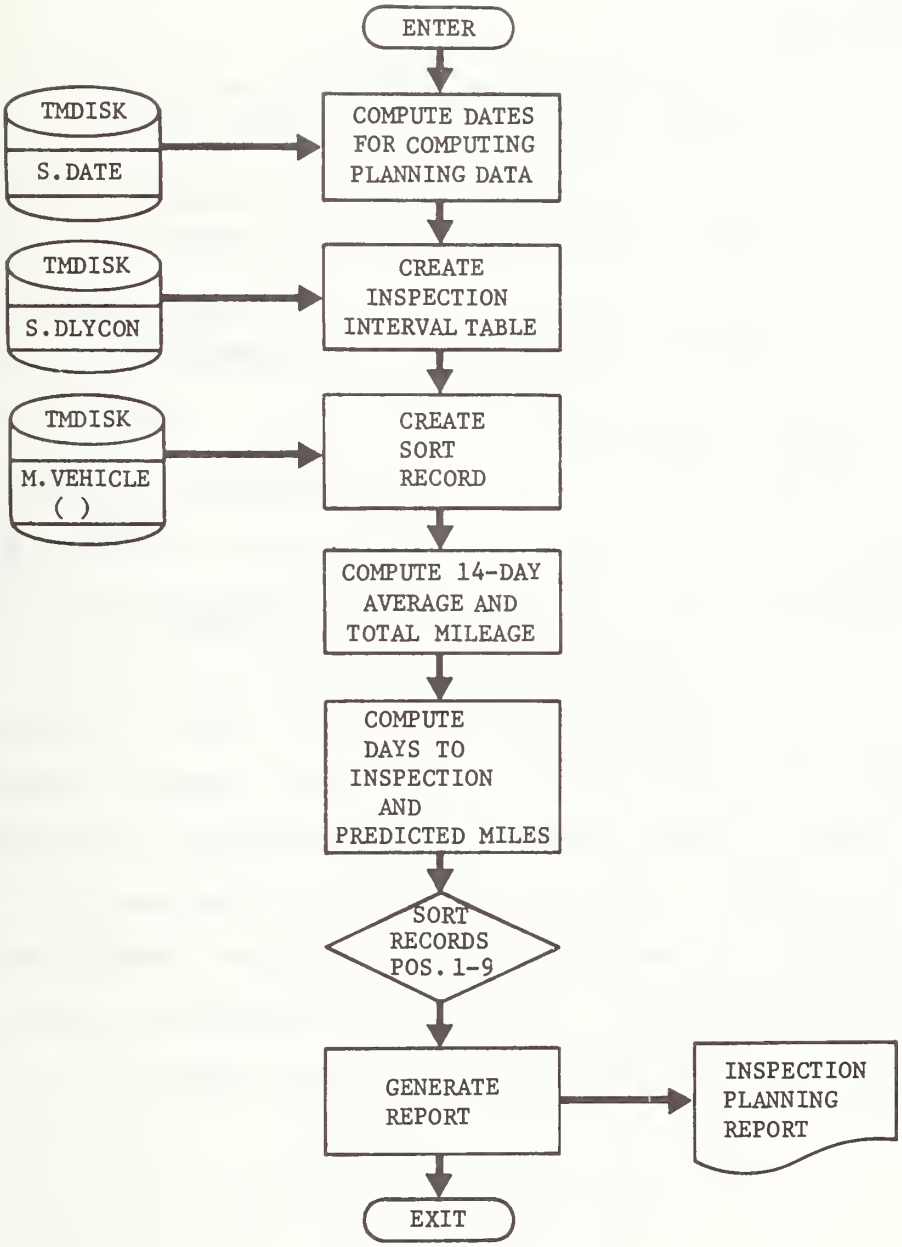

FIGURE 7.16-2
RP066 PROGRAM FLOWCHART

These are:

(a) the Request Date File, CN1510.SRV.S.DATE, created through the execution of IBM utility program, IEBGENER;

(b) the Daily Constants File, CN1510.SRV.S.DLYCON, maintained by the Data Acceptance program, DA600; and

(c) the Vehicle Master File, CN1510.SRV.M.VEHICLE( ), updated by the Vehicle Master File Edit/Update program, DG700.

7.16.2 Program Files

During program execution, one file is created. This file, REPORT-FILE, is used for data manipulation and sorting. The file is described in file and record specifications (Tables 7.16-1 and 7.16-2).

7.16.3 Processing Functions

As illustrated in the flowchart (Figure 7.16-2), the Request Date File is read to obtain the report date. This date is used to calculate two other dates, BACK-DATE and FORWARD-DATE. BACK-DATE is 14 days prior to the report date and is the beginning of the period for which daily vehicle miles will be accumulated. FORWARD-DATE is 14 days after the report date--that is, a benchmark date used to predict mileage since last inspection when no action is taken.

TABLE 17.16-1

PROGRAM FILE SPECIFICATION

FILE NAME: Inspection Planning Report File

FD NAME: REPORT-FILE

DATA SET NAME: &REPORT

NUMBER OF RECORD FORMATS: 1 RECORD SIZE: 28 Characters

FILE ORGANIZATION: Records are sequenced by: Division Number
Predicted Days to Inspection
Bus Number

RECORD FORMATS

FORMAT CODE	RECORD NAME	MAX. NO. PER BUS	MIN. NO PER BUS
	Inspection Planning Report Record	1	0

TABLE 17.16-2

RECORD SPECIFICATION

RECORD NAME: Inspection Planning Report Record

FILE NAME: Inspection Planning Report File

COBOL NAME OF RECORD: REPORT-RECORD

RECORD LENGTH: 28 Characters

FIELD POS.	FIELD LENGTH	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	2	XX	R-DIV	Division number
3	3	999	S-VALUE	Days to go sort value
6	4	9(4)	R-VEH-NO	Vehicle number
10	3	S999	R-DAYS-TO-GO	Days before next inspection due
13	5	S9(5)	R-MILES-SINCE	Miles traveled since last inspection
18	5	S9(5)	R-PRED-MILES	Estimated miles since inspection that will have been traveled in 14 days
23	2	XX	R-INSP-SCH	Schedule code of inspection due
25	2	XX	R-INSP-STEP	Step code of inspection due
27	2	XX	R-INSP-TYPE	Type of inspection due
TOTAL	28			

The Daily Constants File is read and using the Inspection Schedule records, an indexed table of inspection mileage intervals (INSP-SCH-INT-TABLE) is established in working storage.

The Vehicle Master File is read, and using the set of records for each coach, the following functions are performed:

(a) A sort record is created. This record is identified by vehicle number and by the division to which the vehicle is assigned.

(b) Accumulated vehicle mileage as of the report date is determined by adjusting the file value, and is placed in working storage.

(c) Mileage traveled during the 14 days prior to report date is determined by accumulating daily miles, and is placed in working storage.

(d) The following computations are performed:

(1) Accumulated mileage as of the last inspection is subtracted from accumulated mileage as of report date to determine mileage traveled since the last inspection.

(2) Mileage traveled during the 14 days prior to report date is divided by 14 to obtain average daily mileage.

(3) Mileage since the last inspection is subtracted from the inspection mileage interval and the difference is divided by average daily miles to obtain the predicted number of days until the next inspection is due. As the subtraction operation may result in a negative answer, the number of days to go may also be negative.

(4) Mileage traveled during the 14 days prior to report date is added to mileage since the last inspection to determine predicted mileage that the coach will have traveled in 14 days (FORWARD-DATE) if no inspection is performed.

(e) Number of days to go until the next inspection is increased by 500; the result becomes part of the sort key. This function is performed to allow for the sorting of 'days to go' values that ate negative.

(f) Schedule-step code and type of inspection are moved to the sort record, which is then released to the internal sort routine.

The records are sorted in the following sequence:

(a) Division,

(b) Sort value of number of days to go, and

(c) Bus number.

The sorted records are output to the report file and the report is generated.

7.16.4 Error Messages

If an error is detected, the appropriate message is moved to the print file and printed. Error messages are:

(a) RP066--0310 NO DATE RECORD FOUND IN DATE FILE

This message is printed if the program is executed without a valid date card. Program execution is terminated when this is detected.

(b) RP066--0300 INVALID DATA FIELD OR RECORD FOUND IN DAILY CONSTANTS FILE

After the inspection interval table has been created, its contents are checked. If the table contains zeros or spaces, the above message is printed. Program execution is not terminated.

7.17 DT2ØØ - Transaction Master File Update

The Transaction Master File Update program, DT2ØØ, is designed to transfer records of maintenance work performed from the Monthly Transaction File to the more permanent magnetic tape file. During this process, erroneous records previously transferred are purged from the tape file, thus correcting the Transaction Master File. The following types of records are transferred:

(a) Monthly Summary (26) Record,

(b) Monthly Commodity Cost (27) Record,

(c) Inspection (29) Record,

(d) Unit Change (31) Record,

(e) Engine Re-ring (34) Record,

(f) Engine Overhaul (35) Record,

(g) Brake Mileage (38) Record, and

(h) Brake Drum (39) Record.

7.17.1 System Interface

Figure 7.17-1 is a program flowchart. As illustrated, program input consists of two data sets, available from prior job steps. These data sets are:

(a) the Monthly Transaction File (CN1510.SRV.M.MONTRAN ( )), created through the execution of Transaction Disk File Update program, DT1ØØ; and

(b) the Transaction Master File (CN1510.SRV.M.TRANTAPE (0)). This file is a generation data set. The version read is the most current version.

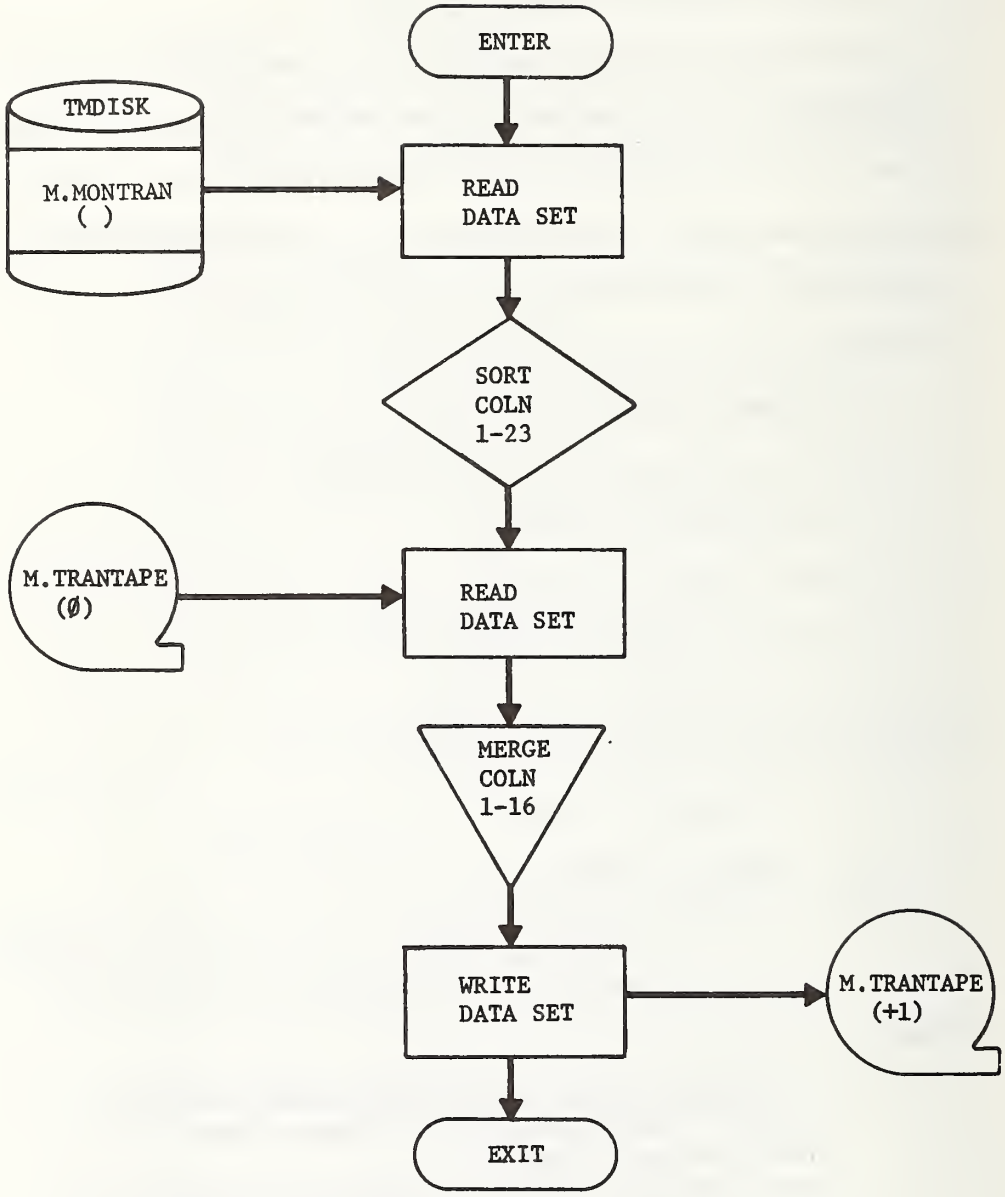

FIGURE 7.17-1
DT200 PROGRAM FLOWCHART

Program output consists of the updated version of the Transaction Master File (CN1510.SRV.M.TRANTAPE (+1)).

7.17.2 Program Files

During program execution, a file is created and used within the program. This file, the Sorted Monthly Transaction File (WORK-FILE), is described in file and record specification sheets (Tables 7.14-1 and 7.17-2).

7.17.3 Processing Functions

As illustrated in Figure 7.17-1, the Monthly Transaction File (CN1510.SRV.M.MONTRAN) is read. The data set read is the most current version of the file. The processing performed consists of:

(a) Sorting the records in the Monthly Transaction File. As a preliminary, one character is added to the record to assure proper sequencing during the sort. Sorting is performed on the first 23 character positions, of which the last is the character added. The sort key consists of:

(1) Vehicle number,

(2) Format code,

(3) Transaction date,

(4) Group-Unit Code,

(5) Processing date, and

(6) Sequence code.

The Group-Unit Code field contains zeros except for Unit Changed records and Inspection records. In the latter, Group-Unit Code contains the inspection schedule and step code.

TABLE 7.17-1

PROGRAM FILE SPECIFICATIONS

FILE NAME: Sorted Monthly Transactions

FD NAME: WORK-FILE

DATA SET NAME: &REPORT

NUMBER OF RECORD FORMATS: 1 RECORD SIZE: 47 Characters

FILE ORGANIZATION: Record sort key consists of:
Vehicle Number
Format Code
Transaction Date
Unit Identification (see Note)
Processing Date
Sequence Code

RECORD FORMATS

RECORD NAME	MAX. NO. PER BUS	MIN. NO. PER BUS
Monthly Transaction Record	U	Ø

Note: Unit Identification contains Inspection Schedule and Inspection Step for Inspection Records, and zeros for other records.

TABLE 7.17-2

RECORD SPECIFICATION

RECORD NAME: Monthly Transaction Record

FILE NAME: WORK-FILE

COBOL NAME OF RECORD: DATA-REC

RECORD LENGTH: 47 Characters

FIELD POS.	FIELD LENG.	FORMAT	COBOL FIELD NAME	FIELD DESCRIPTION
1	22	X(22)	W-REC-KEY	Record Key
23	1	9	SEQ-KEY	Sequence Key
24	24	X(24)	W-REC-DATA	Record Data
TOTAL	47 Characters			

(b) Merging the sorted records and the contents of the Transaction Master File. This process involves reading the two files, matching transactions, and writing out the appropriate records to a new version of the Transaction Master File. When no match occurs, the record with the lesser sort sequence is written out first. This preserves the sort sequence (positions 1-22) of the output file.

The record match is made on the first 16 character positions. When this occurs, further processing depends on the type of record. In the case of monthly records, the record with the most recent processing date is written out. For other record types, the Transaction Modifier Code contained in the Monthly Transaction File record is examined. If the code has a value of zero, the record is an original transaction and is written out to the output file. If the code has a value of one, the transaction represents the correction of a record previously entered. Both matching records from the Monthly Transaction File and the Transaction Master File are purged.

7.17.4 Error Messages

No error messages are printed by this program.

7.17.5 Remarks

When a transaction is read from M.MONTRAN( ), which has an action code of 1, the record must have a matching record on M.MONTRAN( ) or on M.TRANTAPE(0). This is because the purpose of this code is to purge an existing transaction. If no such record is found, the transaction with the '1' code is ignored. Only transactions that have a zero (0) action code are written to the tape file.

7.18 VEHLST - Vehicle Master File List

The Vehicle Master File List program, VEHLST, is designed to generate an on-demand report. This report displays the contents of Vehicle Master File records in a format (see Figure 7.18-1) that is easy to use and interpret. The information to be displayed is specified by the user when the report is requested. The format of the request is described in Section 4.3, Request Cards. The number of request cards used to specify the request is unlimited. Through these cards, the user may specify the coaches for which the listing is to be generated and the types of master file records to be displayed. Coach options are:

(a) One or more individual coaches,

(b) One or more series of coaches, or

(c) All coaches.

Under the latter two options, the user can limit the request to coaches assigned to a division by specifying the division number in the request.

Record type options are:

(a) Daily records only;

(b) Monthly records only;

(c) Unit change records, including engine re-ring, engine overhaul, and brake reline records:

(e) Unit change and monthly records; and

(f) All records.

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Inspection records are displayed under all options if the user is maintaining records of this type.

7.18.1 System Interfaces

Figure 7.18-2 is a program flowchart. As illustrated, program input consists of the Vehicle Request Card File and the Vehicle Master File (CN1510.SRV.M.VEHICLE). As the program is normally executed as a one-step stand-alone job, the generation data set input to the program is version 'Ø'.

Program output consists of print files that do not interface with any other program.

7.18.2 Program Files

No internal file is created during system execution.

7.18.3 Processing Functions

As illustrated in Figure 7.18-2, the Vehicle Request Card File is read. The contents of the request cards provide report control and the selection of Vehicle Master File records. Selection is made in terms of the vehicles requested and of the output record types requested. The format of the vehicle request card is described in Section 6.23.

The program reads the current version of the Vehicle Master File, selects the appropriate records, creates output records, and prints the information requested.

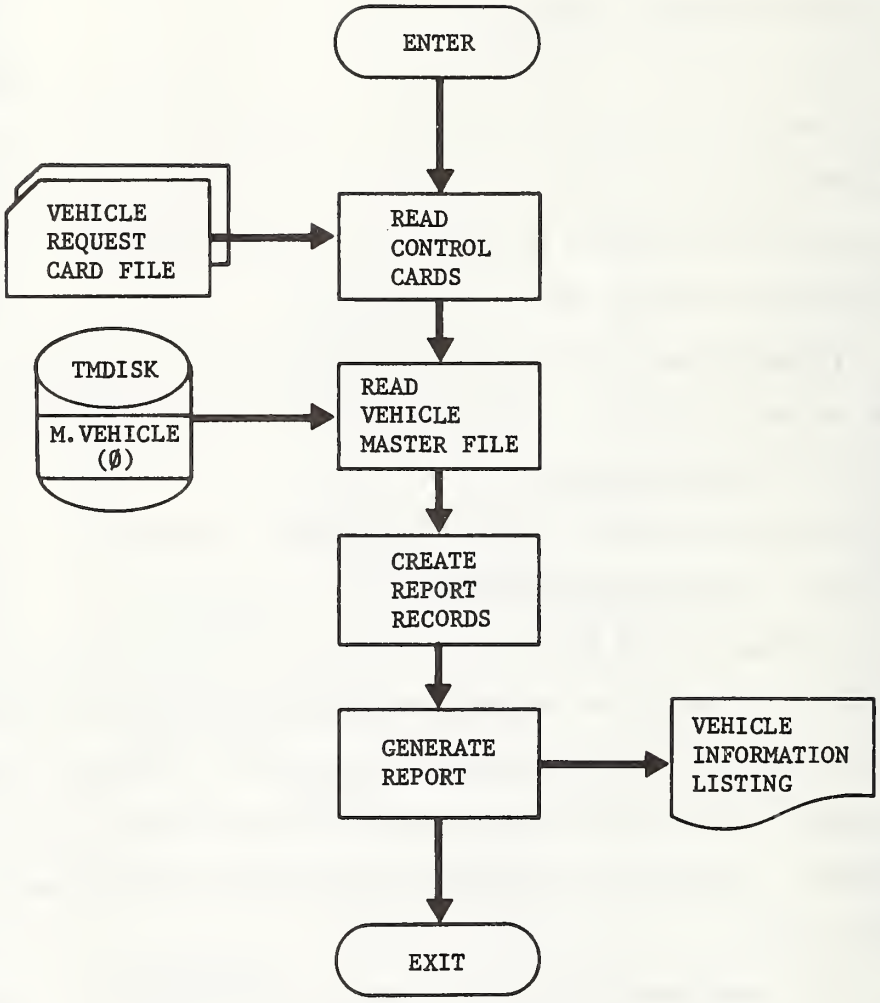


FIGURE 7.18-2
VEHLST PROGRAM FLOWCHART

The following output records are created:

(a) Vehicle Header: a single record is created from the Header Record and the Accumulated Miles Record in the Vehicle Master File.

(b) Daily Commodity: a record is created for each Daily Record in the Vehicle Master File.

(c) Monthly Commodity: there are up to seven sets of monthly records in the Vehicle Master File. These records are the Monthly Summary Record and the Monthly Commodity Cost Record. A singe record is created from the two records for each month.

(d) Inspection; one record is created from the Inspection Record in the Vehicle Master File. This record contains the same data items as the master file record. Mileage since last inspection is calculated by subtracting the accumulated mileage in the Inspection Record from vehicle accumulated mileage in the Accumulated Miles Record. This addition data item is indicated in the output record.

(e) Unit Change: one record is created for each comparable record in the Vehicle Master File.

(f) Re-ring and Overhaul: one record is created from the Engine Reing Record and one record is created from the Engine Overhaul Record in the Vehicle Master File. The two output records created are combined in the print routine.

(g) Brake Mileage and Brake Drum: separate output records are created from the corresponding Vehicle Master File records and combined in the print routine.

7.18.4 Error Messages

VEHLST generates no error message.

7.18.5 Remarks

Request cards must be sequenced in ascending order by vehicle number.

7.19 PRTMIL - Tire Mileage Report Generator

The Tire Mileage Report Generator (PRTMIL) is designed to produce a report of daily mileages recorded against each vehicle in the S/U System. The format of this report is described in Figure 7.19-1. This report is produced for a one-month period, and will enable maintenance management to monitor the monthly mileage traveled by each vehicle.

In addition to the report, a punched card deck of the mileages is produced. These cards are used by Dallas Transit System to monitor monthly tire mileage by vehicle.

7.19.1 System Interfaces

Figure 7.19-2 is a program flowchart. As illustrated, program input consists of one data set, CN1510.SRV.M.MILECARD, created by the Monthly Tire Mileage Processor program, RPØ57. Program output consists of the Tire Mileage report and of a card deck, Tire Mileage Punch File.

7.19.2 Program Files

No internal files are used by program PRTMIL.

7.19.3 Processing Functions

As illustrated in Figure 7.19-2, the program reads daily vehicle mileage records from the Monthly Tire Mileage File, CN1510.SRV.M.MILECARD. For each record, the program produces one print line on the Tire Mileage report, and punches one card containing the mileage data. A monthly mileage total is printed for each vehicle.

```
                              CARD COLUMNS
         1111111111222222222233333333334444444444555555555566666666666
1234567890123456789012345678901234567890123456789012345678901234567890123456789

                    TIRE  MILEAGE
               FOR  MONTH  OF XXX  19XX

 BUS      DATE      MILES

ZZZ9    MO/DA/YR  ZZ,ZZ9-
ZZZ9    MO/DA/YR  ZZ,ZZ9-
ZZZ9    MO/DA/YR  ZZ,ZZ9-
ZZZ9    MO/DA/YR  ZZ,ZZ9-
ZZZ9    MO/DA/YR  ZZ,ZZ9-
          TOTAL  ZZZ,ZZ9-

ZZZ9    MO/DA/YR  ZZ,ZZ9-
ZZZ9    MO/DA/YR  ZZ,ZZ9-
ZZZ9    MO/DA/YR  ZZ,ZZ9-
ZZZ9    MO/DA/YR  ZZ,ZZ9-
ZZZ9    MO/DA/YR  ZZ,ZZ9-
ZZZ9    MO/DA/YR  ZZ,ZZ9-
ZZZ9    MO/DA/YR  ZZ,ZZ9-
ZZZ9    MO/DA/YR  ZZ,ZZ9-
ZZZ9    MO/DA/YR  ZZ,ZZ9-
ZZZ9    MO/DA/YR  ZZ,ZZ9-
          TOTAL  ZZZ,ZZ9-

ZZZ9    MO/DA/YR  ZZ,ZZ9-
ZZZ9    MO/DA/YR  ZZ,ZZ9-
ZZZ9    MO/DA/YR  ZZ,ZZ9-
ZZZ9    MO/DA/YR  ZZ,ZZ9-
ZZZ9    MO/DA/YR  ZZ,ZZ9-
ZZZ9    MO/DA/YR  ZZ,ZZ9-
          TOTAL  ZZZ,ZZ9-

DALLAS  TRANSIT  MONTHLY  TOTAL  MILES ZZ,ZZZ,ZZ9
```

FIGURE 7.19-1
FORMAT OF TIRE MILEAGE REPORT

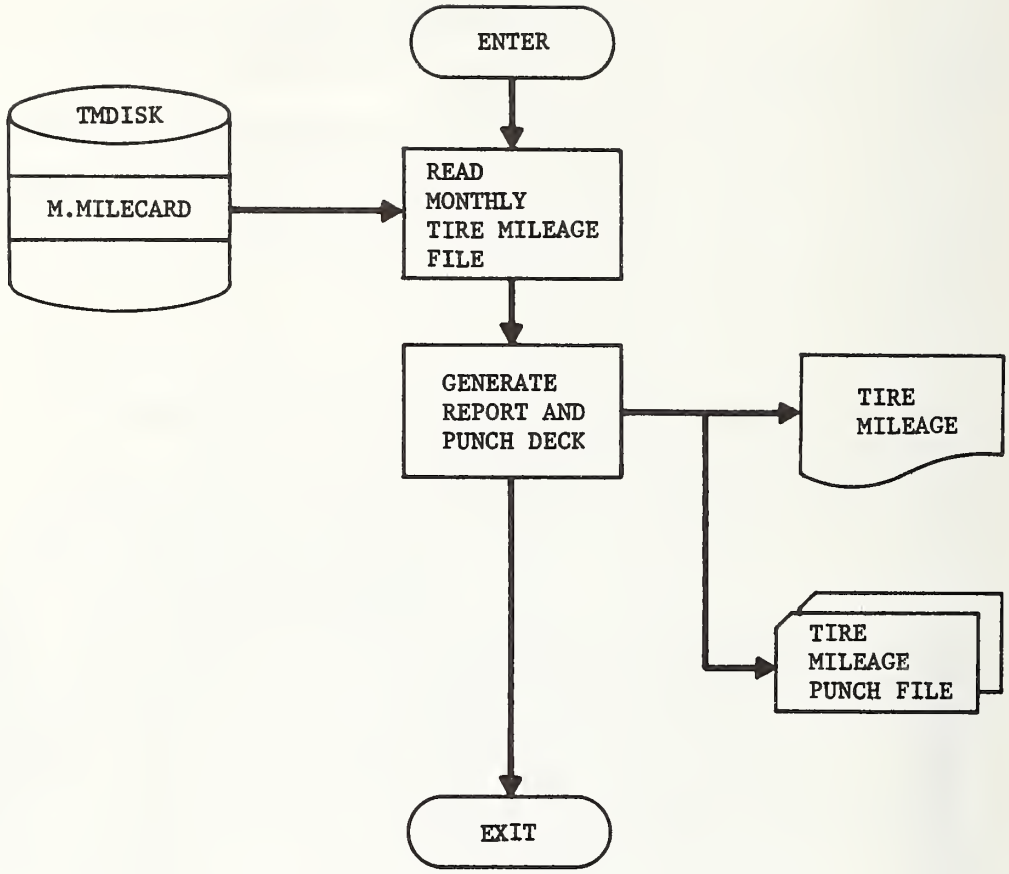


FIGURE 7.19-2
PRTMIL PROGRAM FLOWCHART

After all mileage records have been processed, a mileage summary is printed that is an aggregate of all the mileages for all vehicles on file.

7.19.4 Error Messages

No error messages are printed by this program.

7.19.5 Remarks

The creation of the punched card data set may be suppressed by dummying out the file in the procedure for executing PRTMIL. The printed report will still be produced.

7.20 IEBGENER - Data Set Copy Utility

The IBM utility program IEBGENER is employed in the SIMS S/U System as a data set copy routine. The utility is used in two ways during system execution.

The first use of IEBGENER is to copy DTS data collector tapes to a file on the S/U disk pack. DTS submits one data collector tape for each day's input. System execution sometimes requires the processing of several daily tapes, such as after a weekend. IEBGENER is used to copy from one to five data collector tapes to data set DAILYTRN on the system disk. DAILYTRN is then read by the DTS Input Tape Processor program, DTTAPE.

The second use of IEBGENER is to copy the user-supplied request date cards, data set DATECD, to the Request Date File, CN1510.SRV.S.DATE. The Request Date File is read by the various system programs, and provides dates for the report generators. The 80-character card input is compressed to a 60-character record when copied to the Request Date File.

The utility requires editing control records to accomplish this compression. Card-image records are read from the Service System Control File, CN1510.SRV.S.CTL. The file member CTLDATE contains the needed control records.

Figures 7.20-1 and 7.20-2 give program flowcharts for the two uses of IEBGENER.

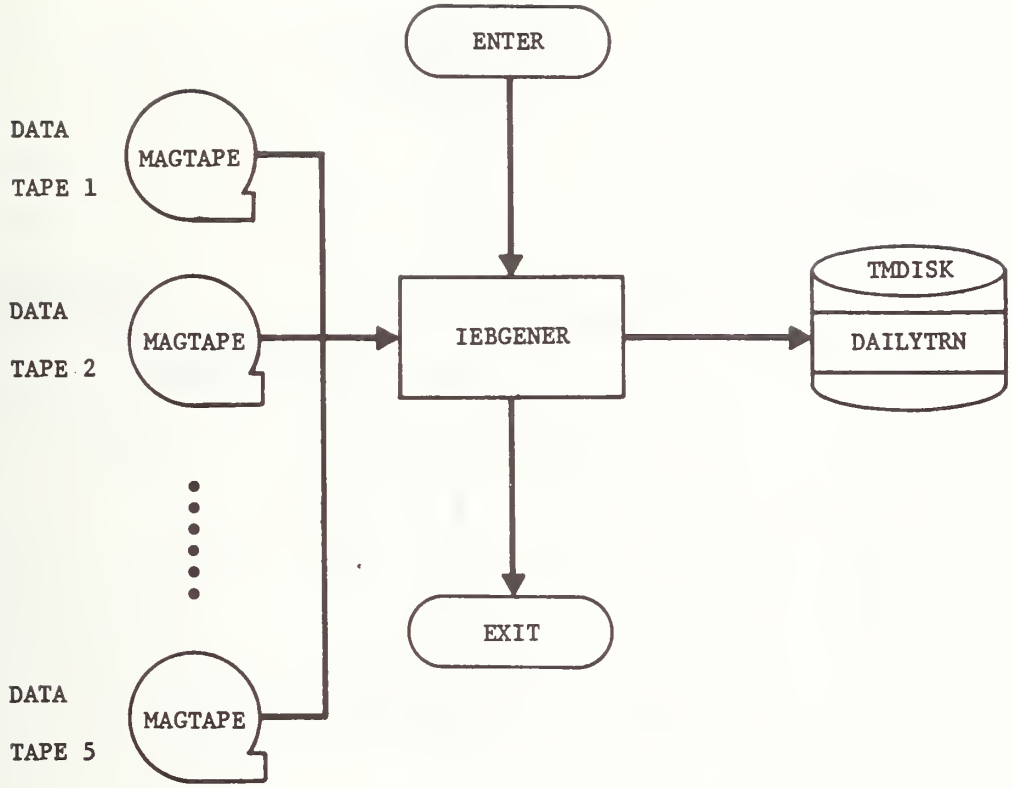


FIGURE 7.20-1
DTS DATA COLLECTOR TAPE COPY FLOWCHART

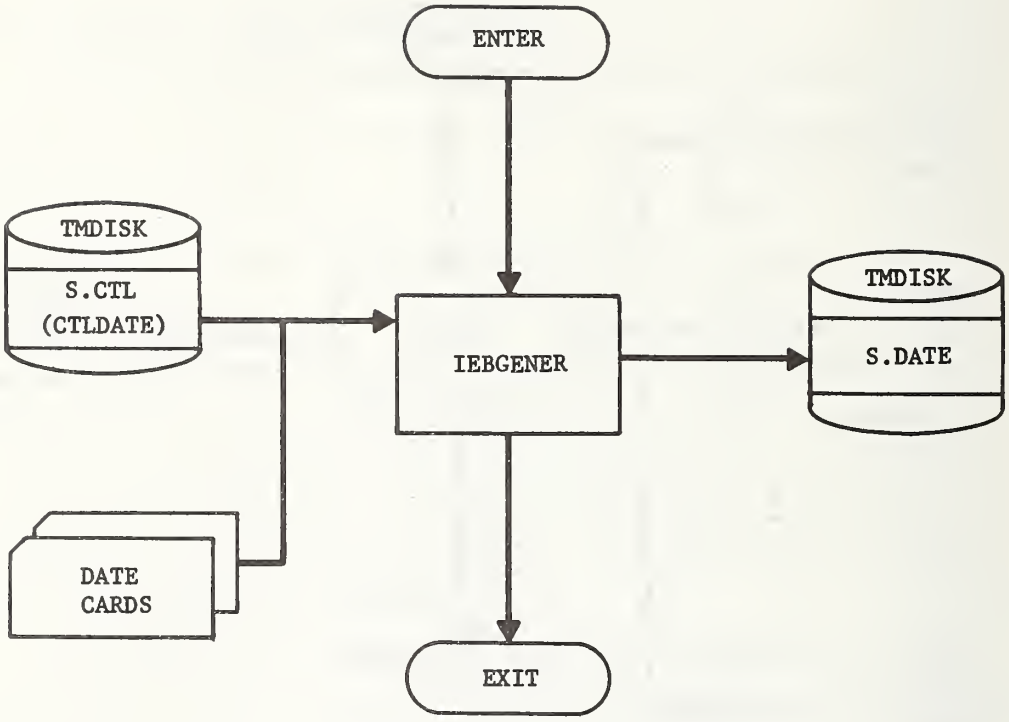


FIGURE 7.20-2
DATE CARD COPY FLOWCHART

7.21 IERRCØØ - Sort/Merge Utility

The IBM utility program IERRCØØ is used to sort the user-supplied transactions before processing by the Vehicle Master Edit/Update program, DG700. The Data Acceptance program, DA600, builds a file of reformatted transactions containing a 12-character sort key. This key consists of a vehicle number, transaction date, and format code. The transactions to be sorted are stored in data set CN1510.SRV.M.TRANS.

IERRCØØ is used to sort file M.TRANS on the 12-character sort key. The sort output is data set CN1510.SRV.M.SRTRANS. This file of sorted transactions is read by the Vehicle Master File Edit/Update program, DG700.

Sort parameters are required to control the utility operation. These are read from member CTLSRV03 of the Service System Control file, CN1510.SRV.S.CTL.

Figure 7.21-1 is a program flowchart for this utility.

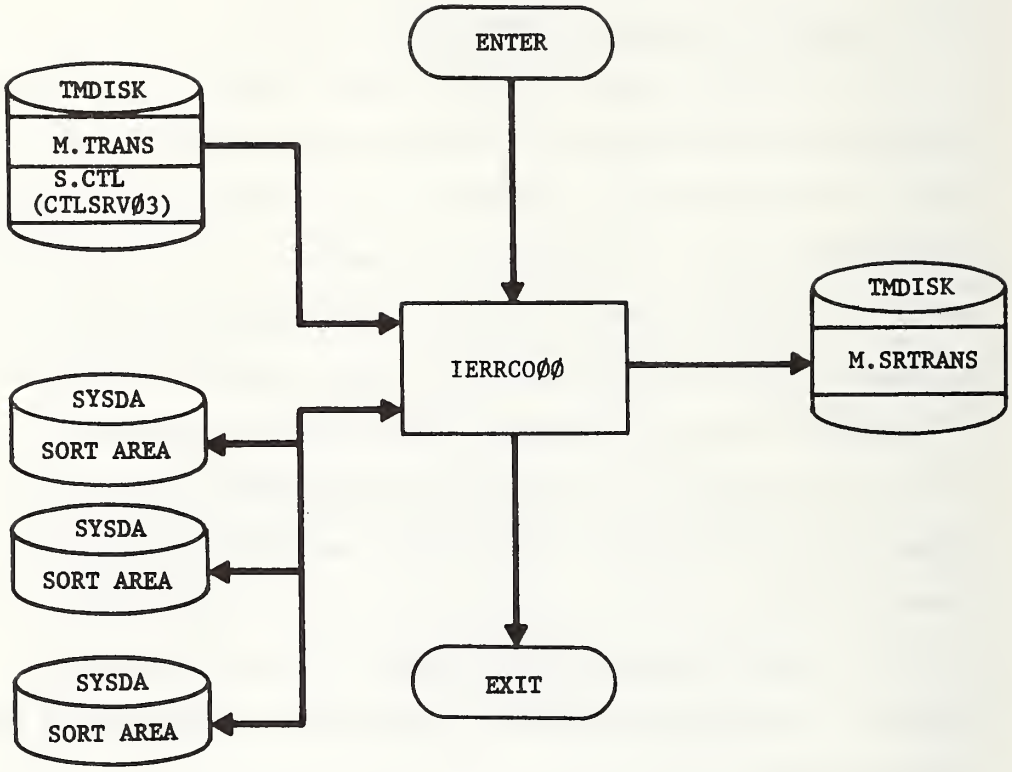


FIGURE 7.21-1
IERRCOØØ PROGRAM FLOWCHART

7.22 IEHDASDR - Disk Save Utility

The IBM utility program IEHDASDR is used to dump the contents of the S/U System disk TMDISK to magnetic tape. This procedure is performed on a weekly basis to facilitate recovery in event of a system problem.

IEHDASDR requires program control records to designate the function to be performed. These control records are read from member CTLBKUP of the Service System Control File CN1510.SRV.S.CTL.

The disk save procedure is currently used at Dallas City Hall computer center. At Optimum Systems, Inc., Santa Clara, California, where the ACTD system is run, the backup procedure for customer private disk packs is a standard operation procedure of the service bureau.

Figure 7.22-1 is a program flowchart of IEHDASDR as used at Dallas.

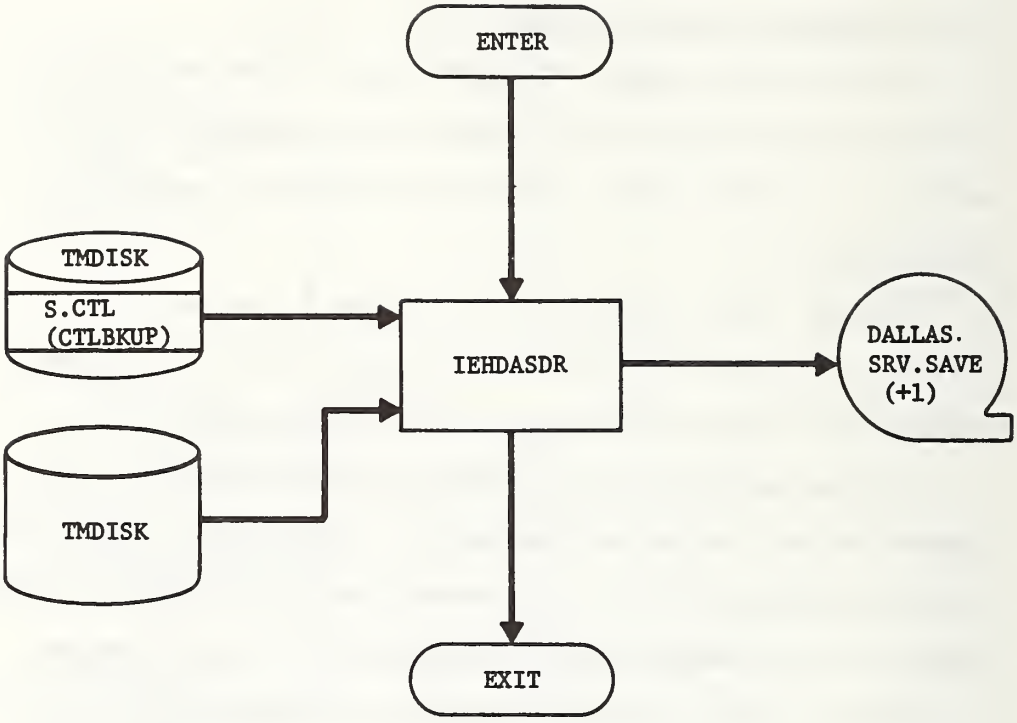


FIGURE 7.22-1
IEHDASDR PROGRAM FLOWCHART

8.0 SIMS SERVICE/UNIT CHANGE SYSTEM INSTALLATION

Installation of the SIMS S/U System involves:

(a) preparation of the data base;

(b) initialization of system files and program libraries and entry of the data base information; and

(c) generation and analysis of reports to check the data base information entered.

8.1 Data Base Preparation

Information required for system start-up consists of:

(a) System constants, and

(b) Vehicle data.

8.1.1 System Constants

The design of the S/U System provides for four constants files, described in Sections 6.2 through 6.5. The number of files for which the user must provide information at system start-up and the nature of that information depends on the extent to which the user elects to maintain the optional vehicle records.

Mandatory input at system start-up consists of:

(a) one Service System Constants record (see Section 4.1.7). This record must contain the prices of consumables--fuel, oil, and coolant--and a code to identify each type of fuel for which a price is entered. It is preferable, but not mandatory, that the user also enter the daily records purge factor and the maximum number of duplicate records allowed. If these values are not entered, default values are used. The default values are:

Daily records purge factor	45 days
Maximum number of duplicate records	35

(b) one Fleet Constants and Limits record (see Section 4.1.9) for each fleet. This record must contain a fleet number and a code to identify the type of fuel used by the fleet; the code must be the one used to identify the price of that fuel in the Service System Constants record. It is preferable, but not mandatory, that the user also enter the consumable capacity values and consumable usage test values for the fleet. If these values are not entered, default values are used. These default values are specified in Section 7.3.3.2, System Constants Input Records.

The fleet identified in this type of record consists of a group of vehicles with common characteristics that are defined in the S/U System through the entry of the Fleet Constants and Limits record. The fleet identification used must apply only to one such group.

Optional input includes:

(a) the definition of inspection schedules (see Section 4.1.8). Inspection schedules must be defined if the user intends to maintain records of vehicle inspections performed.

(b) the definition of group-unit codes and unit names (see Section 4.1.10). Group-unit codes must be defined if the user intends to maintain records of unit changes performed.

(c) the definition of unit threshold values (see Section 4.1.11). These values must be defined if the user intends to generate the Unit Change Candidates report (see Section 3.1.5).

Both mandatory and optional system constants information must be entered in the form acceptable to the S/U System. The input formats are described in Sections 4.1.7 through 4.1.11.

8.1.2 Vehicle Data

Generally, the SIMS S/U System is installed at a transit property that is a "going" concern. Vehicle data entered, therefore, reflects the current status of vehicles within the property.

Vehicle information entered at system start-up consists of:

(a) Mandatory data items. To identify the vehicle to the system, the following data items are entered:

(1) A four-digit vehicle number.

(2) The date on which the vehicle is entered in the system.

(3) The identity of the fleet to which the vehicle belongs.

(4) The identity of the division to which the vehicle is assigned.

(5) Accumulated miles of vehicle operation as of system start-up.

This information is entered by means of a Vehicle Assignment transaction (see Section 4.1.1).

(b) Optional data items. The user may elect to enter an initial record of each type of maintenance event for which records are to be maintained in the system. For example, the user may enter a record of the last inspection performed on each vehicle, if inspection records are to be maintained by the computer system. The types of maintenance events for which records can be maintained, at the user's option, are:

(1) Inspections,

(2) Unit Change,

(3) Engine Re-ring Jobs,

(4) Engine Overhaul Jobs, and

(5) Brake Reline Jobs.

Both mandatory and optional vehicle information to be entered in the system must be in the form acceptable to the S/U System. Existing user records are the source for the preparation of transactions in the prescribed formats. These formats are described in Sections 4.1.1 through 4.1.6.

8.2 Initial System Implementation

The initial implementation of the system consists of:

(a) system installation, and

(b) processing the data base.

The steps undertaken to install the system are:

(a) a disk pack is initialized and the program load library (CN1510.SRV.LOAD) and the Service System Control File (CN1510.SRV.S.CTL) are copied to the pack.

(b) the S/U pack and the system pack are connected.

(c) the S/U catalogued procedures are entered in the system procedures library.

(d) generation data set indices are created, using an IBM utility program, IEHPROGM for:

  (1) Vehicle Master File (M.VEHICLE),

  (2) Monthly Transaction File (M.MONTRAN), and

  (3) Transaction Master File (M.TRANTAPE).

(e) the allocation of space required by data sets, other than generation data sets, is made using an IBM utility program, IEFBR14. Space allocation is required for:

  (1) Daily Constants File (S.DLYCON),

  (2) Fleet Constants File (S.FLTCON),

  (3) Unit Name File (S.UTNAME),

  (4) Unit Threshold File (S.UTTHRS),

  (5) Temporary Storage Transaction File (M.TRANS),

  (6) Temporary Storage Sorted Transaction File (M.SRTRANS),

(7) Daily Extract File (M.DLYEXT),

(8) Temporary Transaction File (M.TEMPTRN),

(9) Request Date File (S.DATE), and

(10) Monthly Tire Mileage File (M. MILECARD), if RP057 is to be executed.

Space required for the four system constants files and the Request Date File will be a maximum of four tracks each. Allocation of space for the remainder of the above data sets depends on the number of vehicles for which records are to be maintained and the volume of daily transactions.

After the installation is completed, the data base is processed through execution of the basic job (SRVDLY). For this run only, the job deck must include override cards for two data sets. Normally, the most recent generation of the Vehicle Master File and the Monthly Transaction File are input to the job. At this stage of system start-up, these files do not exist and dummy data sets must be substituted. This substitution is accomplished by the inclusion in the job deck of the following overrides in procedure SRVUØ1:

```
//SRVØ5.IMSTRØ2 DD DUMMY,DCB=(RECFM=F,BLKSIZE=3Ø)
//SRV11.ITRAN11 DD DUMMY,DCB=(RECFM=F,BLKSIZE=46)
```

The override cards must be inserted in the job deck immediately after the transaction cards.

It should be noted that provisions were made whereby the system can read two input sources of transactions. This was necessary because ACTD and DTS required the ability to read both card and tape input. The tape input consists of servicing records entered from service data collectors.

In normal system execution, the requirements will necessitate only one input source. In this case, one of the two input sources, ITRANØ1 or ITRAN11, must be dummied out in step SRVØ1 of procedure SRVUØ1. This step executes the Data Acceptance program, DA600.

It should also be noted that procedure SRVUTR is executed monthly to update the Transaction Master File. When SRVUTR is initially executed, the following override card must be included in the job deck immediately after the execute card for this procedure.

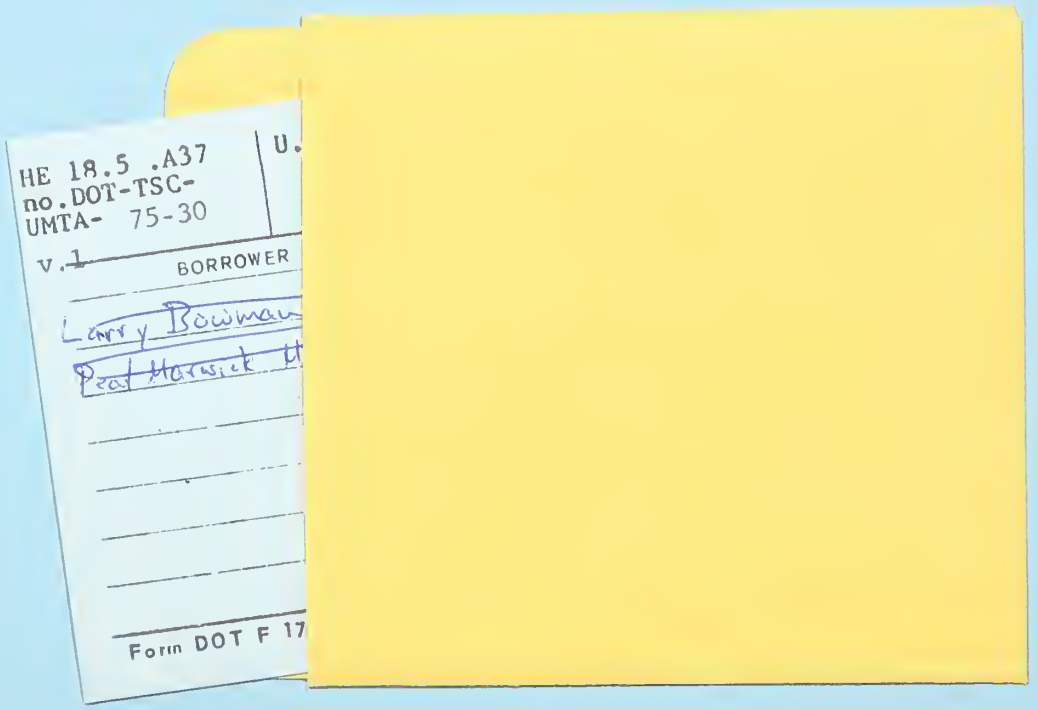
```
//SRVUTR.ITRANØ2 DD DUMMY,DCB=(RECFM=F,BLKSIZE=46)
```

This override will dummy out the old version of the Transaction Master File which does not exist on the first run of procedure SRVUTR.

8.3 Generation and Analysis of Reports

When the basic job is executed to enter the data base, normal output from the run includes a Coach History Report of maintenance transactions. The contents of this report includes vehicle maintenance data added to the system.

Thus, the processing performed by the start-up job will be depicted on this report. The user should analyze this report to ensure that data was entered correctly. This analysis should be performed before any further system runs are made.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